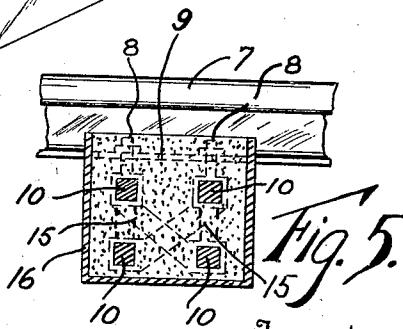
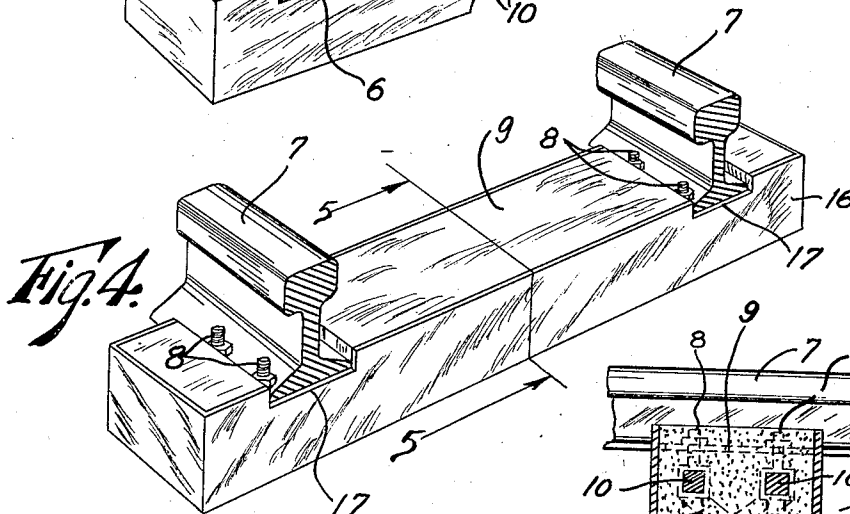
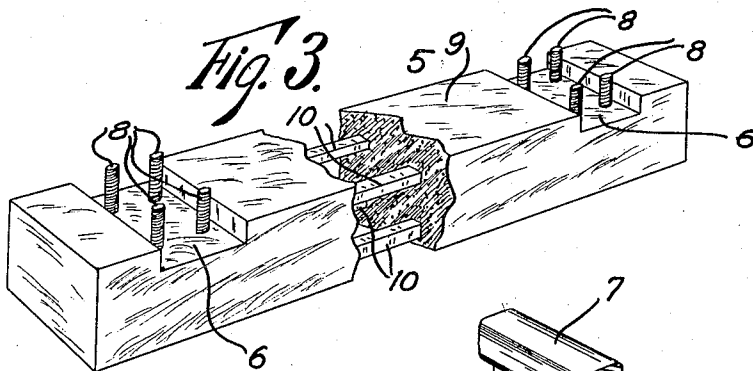
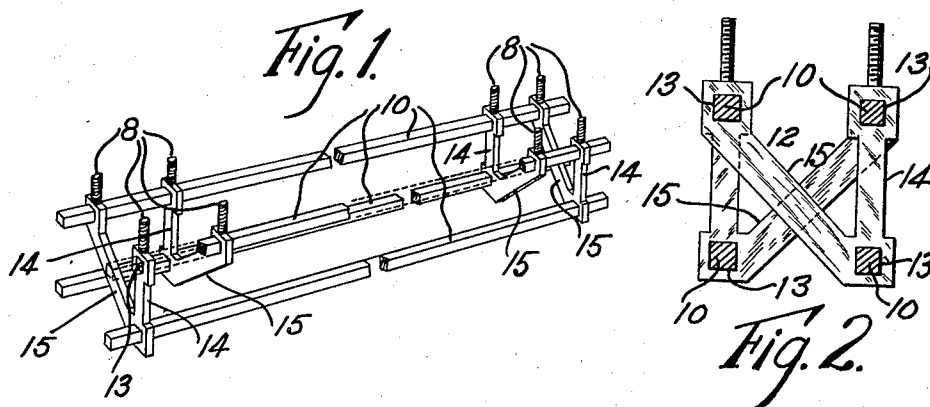


C. F. YOUNBERG.
METAL REINFORCED CONCRETE TIE.
APPLICATION FILED NOV. 2, 1918.

1,330,295.

Patented Feb. 10, 1920.

2 SHEETS—SHEET 1.



Inventor

Ghas. F. Youberg.

By

[Signature]
Attorney

C. F. YOUNBERG.
METAL REINFORCED CONCRETE TIE.
APPLICATION FILED NOV. 2, 1918.

1,330,295.

Patented Feb. 10, 1920.

2 SHEETS—SHEET 2.

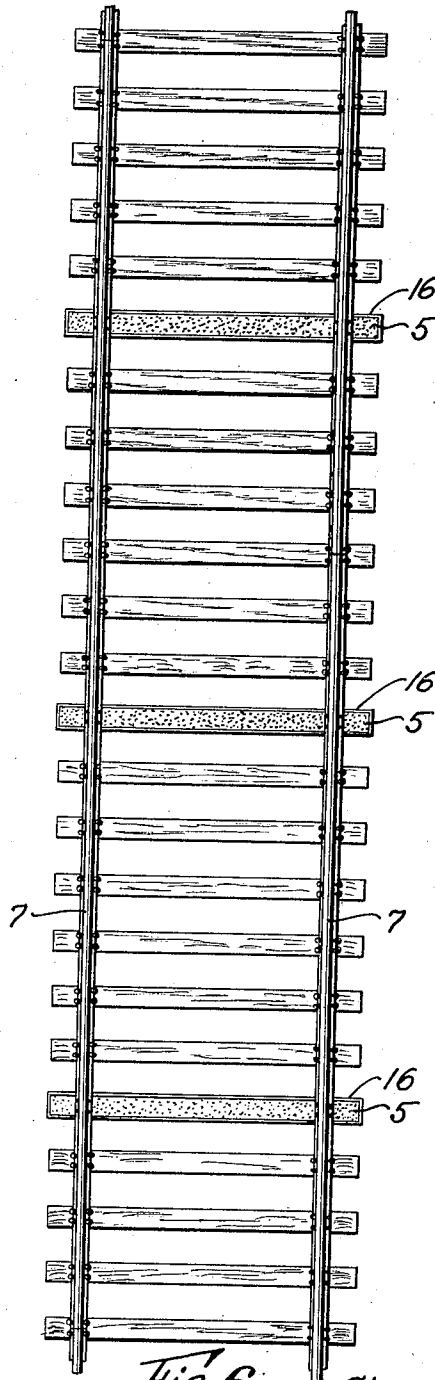


Fig. 6.

By

Inventor.

Chas. F. Youberg.

Attorney.

UNITED STATES PATENT OFFICE.

CHARLES F. YOUNBERG, OF DENVER, COLORADO,

METAL-REINFORCED CONCRETE TIE.

1,330,295.

Specification of Letters Patent.

Patented Feb. 10, 1920.

Application filed November 2, 1918. Serial No. 260,837.

To all whom it may concern:

Be it known that I, CHARLES F. YOUNBERG, a citizen of the United States, residing at 1719 East Sixteenth avenue, in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal-Reinforced Concrete Ties; 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 characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in railway road-bed construction, and relates more particularly to a metal reinforced concrete tie of such construction that the rails of the road-bed engage recesses formed in the tie, the said recesses being properly spaced to correspond with the gage of the road-bed or the spacing of the rails.

As illustrated in the drawing, I have shown a specific metal reinforcement for my improved tie. While this is believed to be a thoroughly practicable form of construction, it must be understood that the invention is not limited to this special metal reinforcement. Furthermore, in the specific construction illustrated, the metal reinforcement is provided with upwardly projecting stems or bolts, adapted to pass through openings formed in the base of the rails, securing nuts being applied to these threaded stems or bolt members and screwed down tightly against the rail, whereby the latter are securely anchored to these ties.

While, if desired, all of the ties may be of this construction, it is believed that such will not be necessary or advisable, as it is believed the greater number of ties may be of ordinary construction, the metal reinforced concrete ties being used only in such number as may be found necessary in order to securely anchor the rails and prevent spreading.

Having briefly outlined my improvement, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing:

Figure 1 is a perspective view of a suitable form of metal reinforcement for my improved tie.

Fig. 2 is a cross section of such reinforcement, shown on a larger scale.

Fig. 3 is a perspective view of my improved tie, the concrete structure being partly broken away to better illustrate the metal reinforcement.

Fig. 4 is a similar view of one of my improved ties, showing the track-rails in place and in cross section.

Fig. 5 is a section taken on the line 5-5, Fig. 4.

Fig. 6 is a top plan view of a railroad-bed equipped with my improved ties, a number of the latter being shown in connection with ties of ordinary construction, the latter largely predominating.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate my improved tie considered in its entirety and provided near each extremity with a recess, 6, adapted to receive the base of the track rail, 7, as illustrated in Figs. 4 and 5. Within each of these recesses is arranged a number of upwardly projecting threaded stems or bolts, 8, whose lower extremities are securely anchored in the body, 9, of the tie, which is preferably composed of concrete, suitably reinforced by metal, which, as shown in the drawing, consists of a number of bars, 10, connected by brackets, 12, each of which is provided with perforations, 13, adapted to receive three of the bars, the brackets being arranged near the opposite ends of the tie and positioned to correspond with the recesses, 6, for receiving the base of the rails. Each of these brackets, as illustrated, is composed of a vertically disposed member, 14, and an inclined or diagonally arranged member, 15, the two members forming a sort of V-shaped structure, with one side of the V vertically disposed, while the other side is inclined. These brackets are alternately arranged and so disposed that their inclined members, 15, cross each other as they appear in the end view of the metallic reinforcement, as best illustrated in Fig. 2.

These ties may be formed at a factory, in which event they will probably be constructed complete, as illustrated in Fig. 3. Again, they may be manufactured in the road-bed where they are to be used, in which event a metal box or casing, 16, forming a sort of flask, may be employed. In this event the metal reinforcement will be placed within the box, 16, and the plastic material poured

thereinto, after which the said material will be allowed to harden. The box or casing, 16, will be cut away on opposite sides, as shown at 17, to conform with the position 5 of the recesses, 6, for receiving the base of the rails. Provision will also be made in casting the structure to prevent the filling of the spaces 6. This may of course be done by fixing temporary blocks to the stems or 10 bolts, 8, of the metal reinforcement, and subsequently, or after the plastic material has become fixed or set in place, removing the false blocks or members; or any other suitable provision may be made for casting 15 the tie with the rail recesses or spaces.

Where my improved ties are employed, the rails will have their bases perforated on opposite sides to receive the threaded shanks, 8, of the tie, and after the rails are 20 put in place, they will be secured to the ties by the use of nuts or other suitable fastening means.

Where my improved ties are employed in suitable numbers, or approximately as indicated in Fig. 6 of the drawing, it is evident 25

that the spreading of the rails of the road-bed will be impossible. Hence, one object of my improvement is to provide as far as possible against accidents due to the spreading of rails or other track difficulty incident 30 to the use of road-beds where the ordinary wood rails are exclusively employed.

Having thus described my invention, what I claim is:

1. A railway tie, composed of metal reinforced concrete and provided with transversely arranged rail-base-receiving recesses, the tie also having bolts extending upwardly within the said recesses for rail-securing purposes. 35

2. A railway tie, composed of hardened plastic material, having embedded therein metal bars and brackets connecting the bars, the metal reinforcement having securing bolts and the body of the tie having transverse rail-base-receiving recesses in which 40 the said bolts are located. 45

In testimony whereof I affix my signature.

CHARLES F. YOUNG.