

J. P. BOOGHER.
RAILWAY TIE.
APPLICATION FILED MAY 17, 1909.

956,622.

Patented May 3, 1910.

Fig. 1.

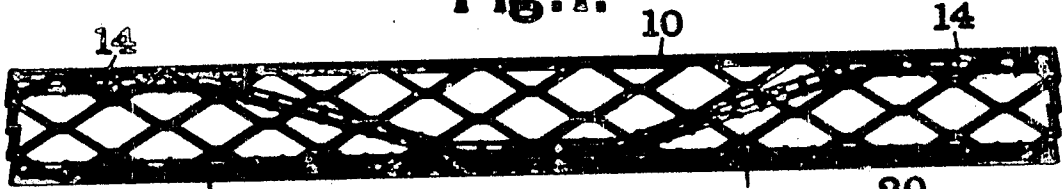


Fig. 2.

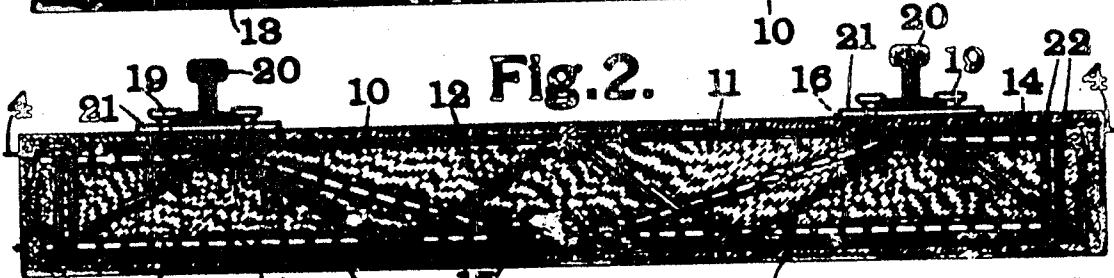


Fig. 3.

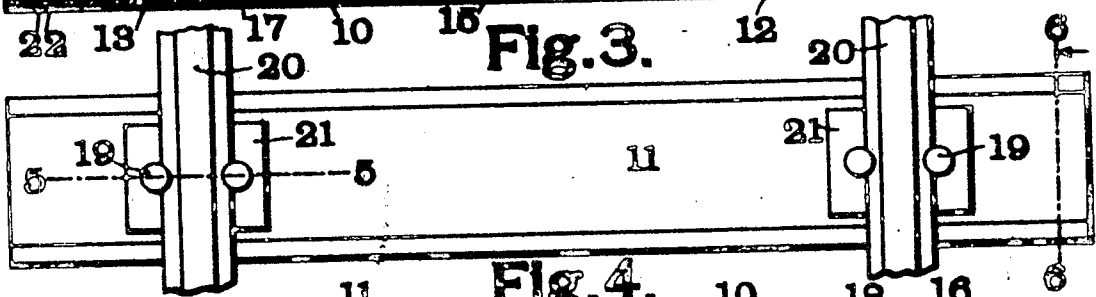


Fig. 4.

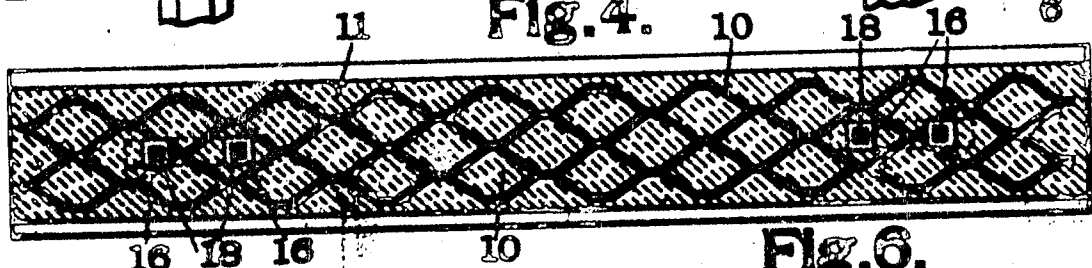


Fig. 6.

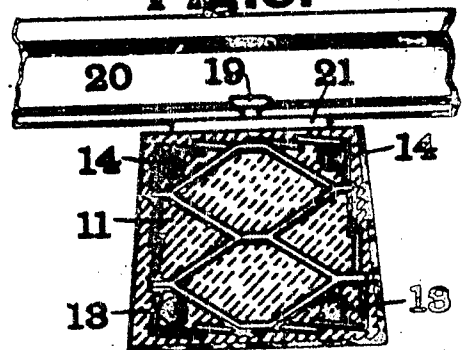
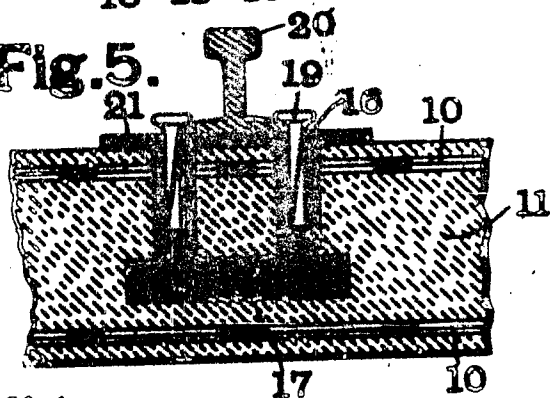


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN P. BOOGHER, OF ST. LOUIS, MISSOURI.

RAILWAY-TIE.

956,622.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed May 17, 1909. Serial No. 496,338.

To all whom it may concern:

Be it known that I, JOHN P. BOOGHER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Railway-Tie, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a railway tie and more particularly to that class of ties composed of a body portion of cement or concrete incasing metallic reinforcements.

The object of my invention is to so construct the reinforcements that while they are comparatively simple the tie will be thoroughly reinforced so that it may be handled like a wooden tie without danger of cracking the cement or concrete.

Another object of my invention is to provide improved means for securing the rails to the tie.

In the accompanying drawings, which illustrate one form of tie made in accordance with my invention, Figure 1 is a side view showing the metallic reinforcements, Fig. 2 is a longitudinal central section through the complete tie; Fig. 3 is a top plan view; Fig. 4 is a section on the line 4-4 of Fig. 2; Fig. 5 is a section on the line 5-5 of Fig. 3 and Fig. 6 is a section on the line 6-6 of Fig. 3.

Like marks of reference refer to similar parts in the several views of the drawings.

10 represents a metallic casing forming part of the metallic reinforcement of the tie and conforming substantially to the outside dimensions of the tie. This casing 10 is preferably made of what is known as expanded metal as shown in the drawings. It may, however, be made of any suitable perforated metal. The casing 10 is but slightly smaller than the outside dimensions of the body 11 of cement or concrete in which it is embedded so that it will thoroughly protect the said body 11 of concrete against cracking. In order to further reinforce the tie the casing 10 is provided with a number of partitions 12 as shown in Fig. 2. These partitions 12 are alternately inclined from the upper to the lower walls of the casing 10 so as to divide the interior of the casing into a number of prism shaped compartments. In order to still further reinforce the tie I

use a pair of reinforcing bars 13 which are placed in the lower portion of the casing 10 and also a pair of reinforcing bars 14 which are placed in the upper part of the casing 10. The central portion of these bars 14 is bent downwardly so as to make contact with the bars 13, as shown in Fig. 2 and the bars 13 and 14 are secured together at their central parts in any suitable manner as for instance by being wrapped by hoop wires 15 as shown in Fig. 2. The ends of the bars 13 and 14 are also connected by the wires 22. In addition to the casing 10 and bars 13 and 14 the body 11 of cement also incases two pairs of metallic uprights 16, one pair being placed adjacent to each end of the tie. Each pair of uprights 16 is joined at the lower ends by means of an integral cross-piece 17.

In each of the uprights 16 is formed a bore 18 which is square in cross-section and is slightly twisted, the twist being preferably about one quarter turn in the length of the bore. The bore is made of sufficient length to receive a spike 19 similar in size to the ordinary railway spike. I find that by slightly twisting the bore of the upright 16 the spike 19 will not be turned out of the bore by the straight upward pull of the rail. It may, however, be removed by a suitable tool by means of which the spike may be given radial motion at the same time it is turned upward. 20 represents the rail and 21 a tie plate placed between the rail 20 and the upper ends of the uprights 16. The spikes 19 may either be formed with a slight twist corresponding to the bore of the uprights 16 or they may be made straight and by being heated when they are driven in the necessary twist may be imparted to them.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a railway tie, the combination with a perforated metallic casing conforming substantially to the exterior of the tie, of a pair of reinforcing rods in the lower part of the casing, and a second pair of reinforcing rods in the upper part of said casing said upper and lower rods being in contact and connected at their central parts.

2. In a railway tie, the combination with a perforated metallic casing conforming substantially to the exterior of the tie, a pair of reinforcing rods in the lower part of said casing, a second pair of reinforcing

rods having their central portions bent downwardly and connected to said first named reinforcing rods.

3. In a railway tie, the combination with
5 a perforated metallic casing conforming substantially to the exterior of the tie, of a series of oppositely inclined perforated metallic partitions dividing the interior of said casing, a pair of reinforcing rods in the
10 lower part of said casing and a second pair of reinforcing rods in the upper part of said casing, said second pair of rods being bent downwardly in their central portions and secured to said first pair of rods.

15 4. In a railway tie, the combination with a body of concrete, of metallic reinforcements therefor, a pair of metallic uprights embedded in each end of the tie, each of said uprights being provided with a slightly
20 twisted bore of angular cross-section, and spikes adapted to conform to the bore of said uprights and hold the rails by friction.

5. In a railway tie, the combination with
25 a body of concrete, of metallic reinforcements therefor, a pair of metallic uprights embedded in each end of the tie, each of said uprights being provided with a slightly twisted bore of angular cross-section and the lower end of each of said pair of up-
30 rights being connected by an integral cross

piece, and spikes adapted to conform to the bore of said uprights and hold the rails by friction.

6. In a railway tie, the combination with
35 a perforated metallic casing conforming substantially to the exterior of the tie, of a series of oppositely inclined perforated metallic partitions dividing the interior of said casing, a pair of reinforcing rods in the
40 lower part of said casing, a second pair of reinforcing rods in the upper part of said casing, said second pair of rods being bent downwardly in their central portions and secured to said first pair of rods, a pair of
45 metallic uprights embedded in each end of the tie, each of said uprights being provided with a slightly twisted bore of angular cross-section, the lower end of each of said pair of uprights being connected by integral cross pieces, and spikes adapted to conform
50 to the bore of said uprights and hold the rails by friction.

In testimony whereof, I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

JNO. P. BOOGHER. [L. S.]

Witnesses:

W. A. ALEXANDER,
ELIZABETH BAILEY.