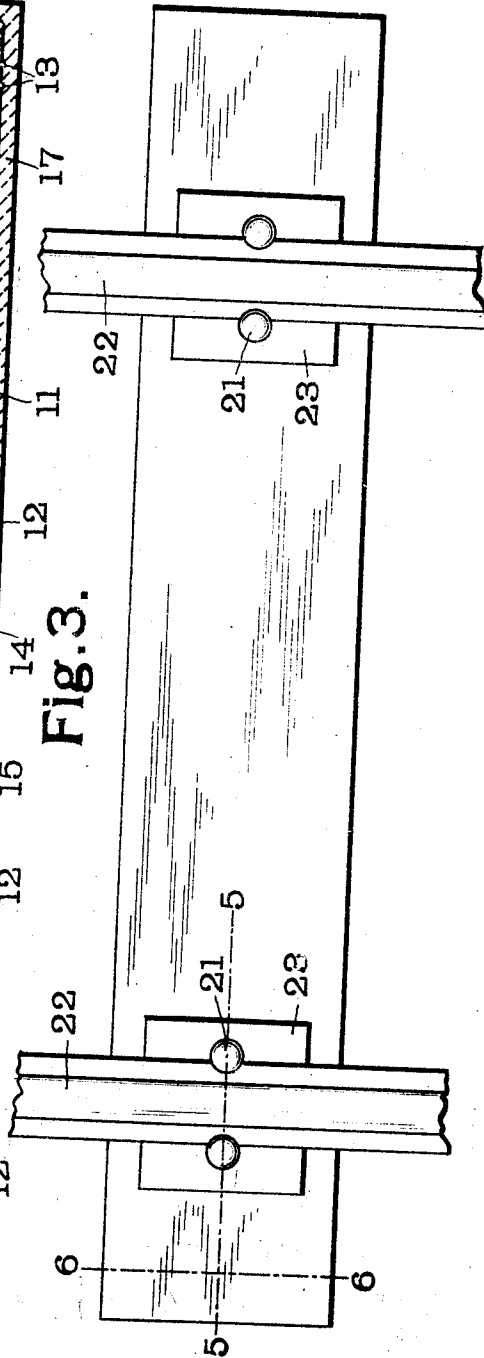
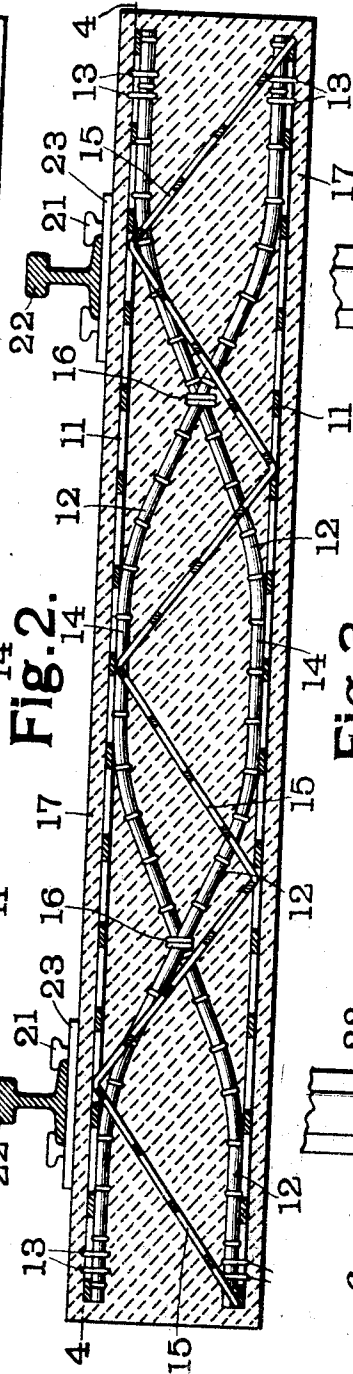
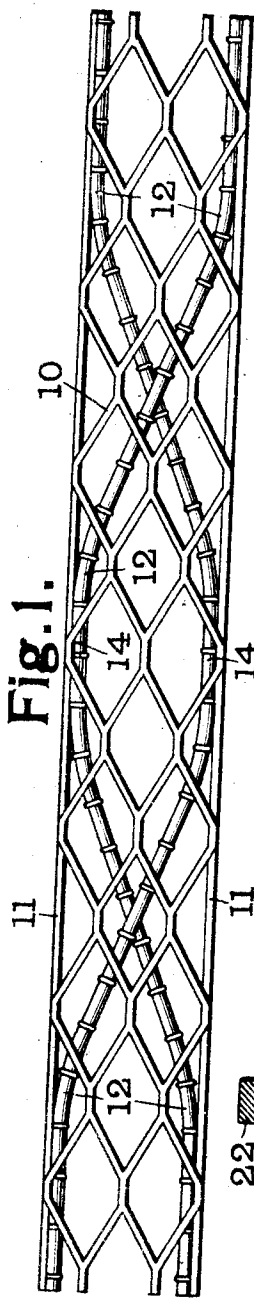


961,478.

J. P. BOOGHER.
RAILWAY TIE.
APPLICATION FILED AUG. 25, 1909.

Patented June 14, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

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Fig. 4.

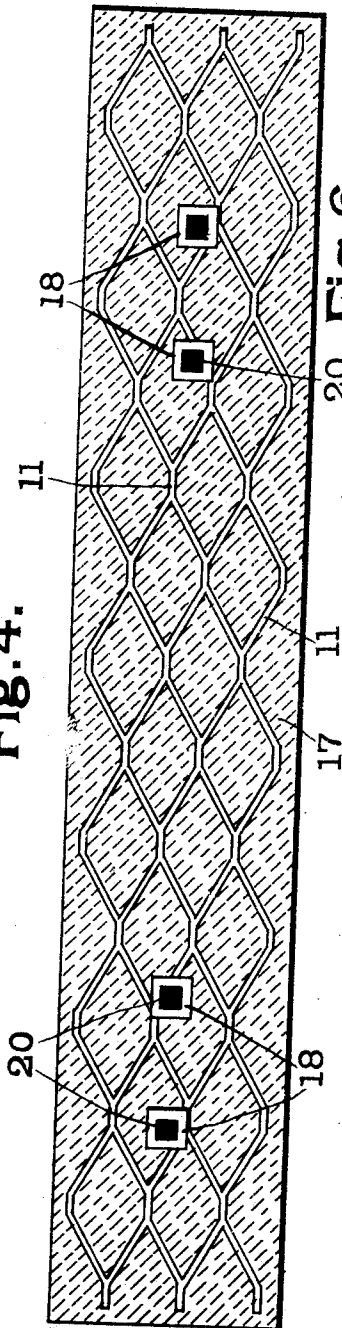


Fig. 6.

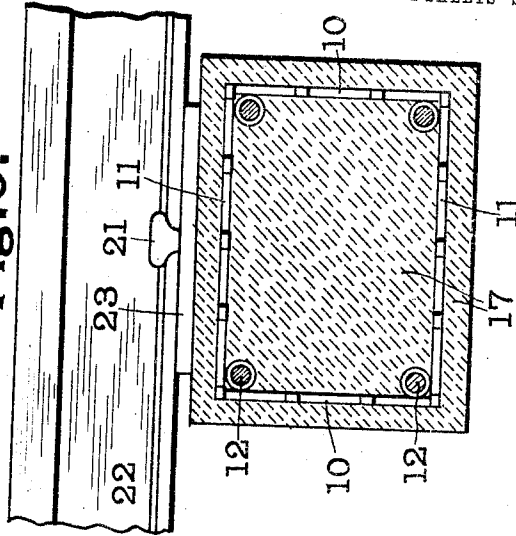
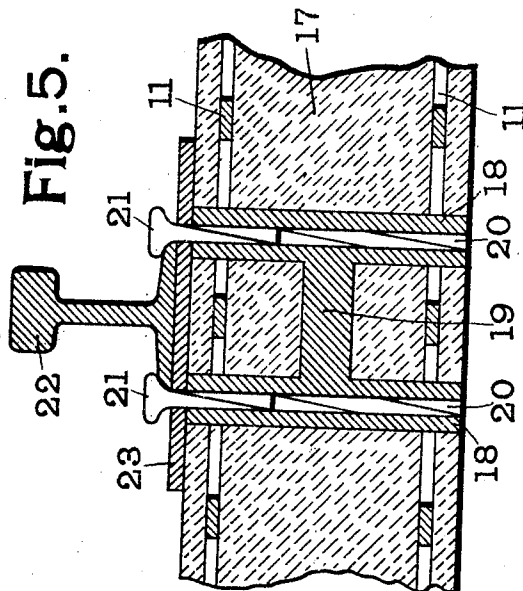


Fig. 5.



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UNITED STATES PATENT OFFICE.

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

RAILWAY-TIE

961,478.

Specification of Letters Patent. Patented June 14, 1910.

Application filed August 25, 1909. Serial No. 514,477.

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 concrete railway tie provided with metallic reinforcements and more particularly to improvements in that form of tie described in my prior application No. 496,338, filed May 17, 1909.

The object of my invention is to so construct the tie that it may be reversed and either face used for the support of the rails and further to so construct the tie that the metallic reinforcements will be equally effective when the main support of the tie is at the two ends and when it is at the central part of the tie.

In the accompanying drawings I 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 vertical longitudinal section of the complete tie. Fig. 3 is a top plan view and Fig. 4 is a horizontal section on the line 4-4 of Fig. 2. Fig. 5 is a longitudinal section on the line 5-5 of Fig. 3. Fig. 6 is a cross section on the line 6-6 of Fig. 3.

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

I provide a casing conforming substantially to the exterior of the tie and this casing is preferably formed of what is commercially known as expanded metal. The casing consists of two side parts 10 and top and bottom parts 11. Within the casing formed by parts 10 and 11 I place reinforcing bars 12. These bars 12 are preferably provided with projections to insure their adherence to the concrete. Two of the bars 12 are placed in the upper part of the casing and preferably at the corners thereof as shown in Fig. 6. These bars are secured at their ends to the upper part of the casing by means of wires 13 and the central parts of said bars are bent down into contact with the lower part of the casing at 14 as shown in Fig. 2. The remaining bars are secured at their ends to the lower part of the casing

by means of wires 13. Their central parts are bent upwardly into contact with the upper part of the casing shown at 14 in Fig. 2.

It will be understood that when the tie is reversed the part which was formerly the upper will become the lower. The bars, therefore, as well as the tie are perfectly symmetrical. The interior of the casing is divided into compartments by means of inclined partitions 15 preferably formed of expanded metal. The reinforcing bars are preferably secured together at the points where they cross by means of wires 16. The crossing and the reinforcing bars are completely surrounded by concrete 17. Embedded in concrete 17 near each end of the tie are a pair of uprights 18. These uprights 18 extend entirely through the tie and are connected at their central parts by means of an integral cross bar 19. Each of the uprights 18 is provided with a slightly twisted bore 20 of angular cross section. The bore 20 extends entirely through the uprights 18.

21 are spikes adapted to conform to the bore of the uprights 18 and as provided in my prior application above referred to, the slight twist of the bore causes the spikes 21 to be held firmly in position against an upward pull, but allows them to be removed by applying a rotary motion to them as they are drawn upwardly.

22 are the rails which are held in position by means of the spikes 21.

23 are bearing plates which are preferably placed between the rails 22 and the tie.

In as much as the bores 20 extend entirely through the uprights 18 the spikes 21 may engage with either side of the tie and furthermore, in case a spike should become broken off it can easily be driven through by a suitable tool.

The disposition of the reinforcing metal is such that the tie is not only adapted to be reversed, but it also affords equal strength where the tie is supported wholly at the ends or mainly in the central portion thereof.

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 rail-securing devices, a metallic reinforcing bar having its ends in contact with the upper part of said casing and its central part bent down in contact with the lower part of said

casing, a second reinforcing bar having its ends in contact with the lower part of said casing and its central part bent up into contact with the upper part of said casing, said reinforcing bars crossing at points between said rail-securing devices, and a bed of concrete embedding said casing and reinforcing bars.

2. In a railway tie, the combination with
10 a perforated metallic casing conforming substantially to the exterior of the tie, of rail-securing devices, a metallic reinforcing bar having its ends in contact with the upper
15 part of said casing and its central part bent down in contact with the lower part of said casing, a second reinforcing bar having its ends in contact with the lower part of said casing and its central part bent up into contact with the upper part of said casing, said
20 reinforcing bars crossing and being connected at points between said rail-securing devices, and a bed of concrete embedding said casing and reinforcing bars.

3. In a railway tie, the combination with
25 a body of concrete, of metallic reinforcements therefor, and a pair of metallic up-

rights embedded in each end of said tie, each of said uprights being provided with a slightly twisted bore of angular cross section extending from one side of the tie to
30 the other, and spikes adapted to cooperate with either end of said uprights and engaging with the bore thereof.

4. In a railway tie, the combination with a body of concrete of metallic reinforcement
35 s therefor, a pair of metallic uprights embedded in each end of said tie, each of said uprights being provided with a slightly twisted bore of angular cross section extending from one side of the tie to the other, the
40 uprights of each pair being connected by integral cross bars, and spikes adapted to cooperate with either end of the uprights and to engage with the bore thereof.

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

JNO. P. BOGHER. [L.S.]

Witnesses:

ELIZABETH BAILEY,
L. L. MEAD.