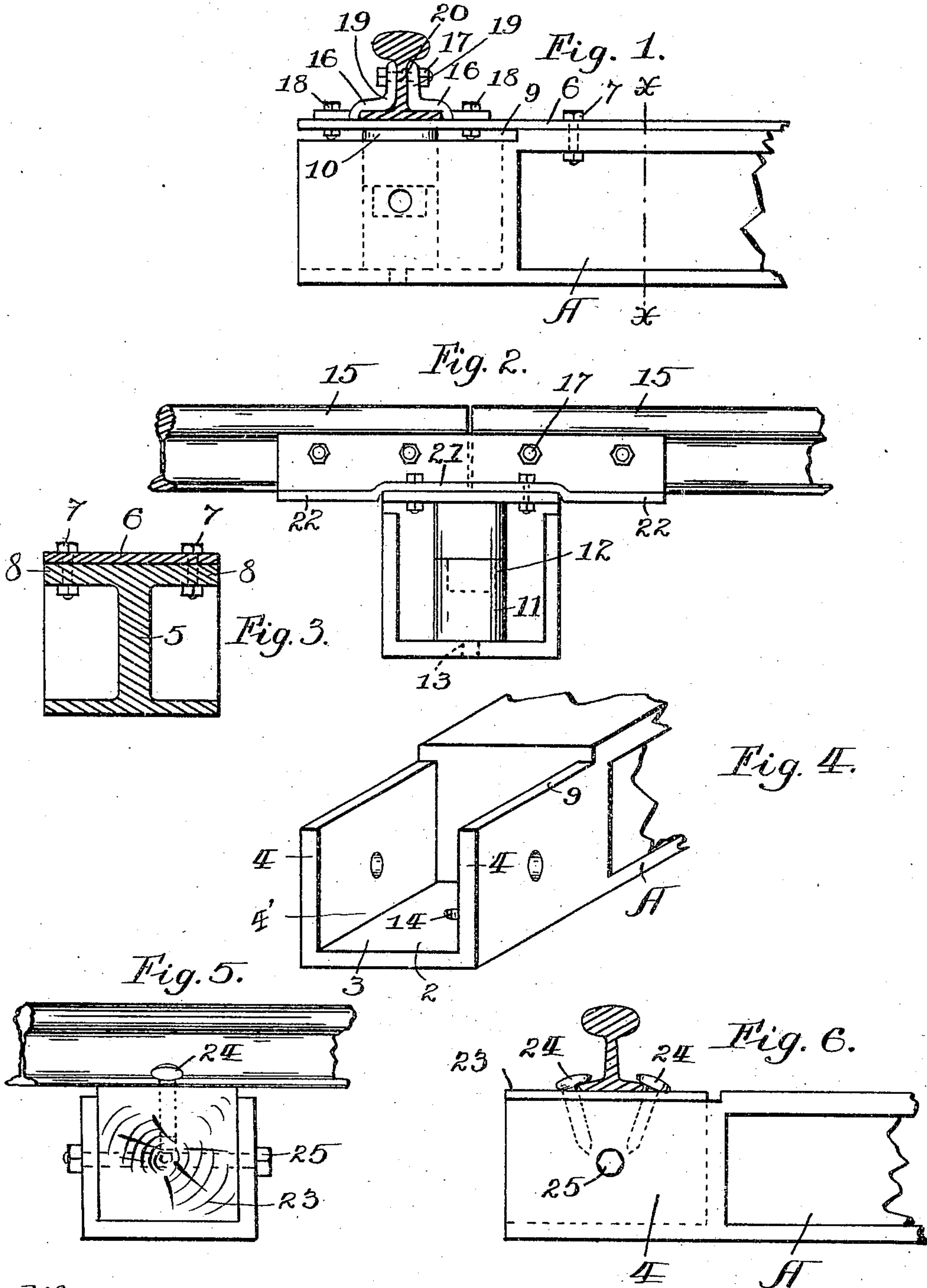


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J. E. BITTIKOFFER.
METALLIC RAILWAY TIE.
APPLICATION FILED OCT. 28, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN E. BITTIKOFFER, OF ST. PAUL, MINNESOTA.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 773,186, dated October 25, 1904.

Application filed October 28, 1903. Serial No. 178,813. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. BITTIKOFFER, a citizen of the United States of America, and a resident of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

My invention relates to improvements in metallic railway-ties, and has for its object a railway-tie that is durable, simple and cheap in construction, and which reduces wear of the parts of the tie and of the rails which rest upon the tie.

A further object is to provide means by which worn or broken parts of the tie can be easily and quickly renewed at a minimum of expense.

To the above ends my invention consists of a metallic tie having its ends provided with receptacles for holding a removable support below the rails and means for fastening the rails above said removable support.

In the accompanying drawings, forming part of this specification, Figure 1 is a detail side view of my improved metallic railway-tie, showing the end of the tie constructed for use for supporting the abutting ends of a pair of rails. Fig. 2 is an end view of Fig. 1. Fig. 3 is a section taken on the line X X. Fig. 4 is a detail perspective view of one end of the tie, showing the support for the rail removed. Fig. 5 is an end view of the tie used between the ends of the rail, and Fig. 6 is a side view of Fig. 5.

In the drawings, let A represent the tie, which is used for supporting the rails. This tie has a receptacle 2 formed on each end, while the intermediate portion or body of the tie is in the form of an I-beam 5, as shown in Fig. 3. A strong and durable construction is thus produced. Each receptacle has a base 3, parallel sides 4, and an open side 4'. When the tie is used for supporting the abutting ends of rails, as shown in Figs. 1 and 2, a plate 6 is fastened, by means of bolts 7, to the upper flanges 8 of the I-beam. This plate projects over the receptacles in the ends of the tie. The sides 4 of each receptacle are cut away at 9, so that the projecting ends of

the plate spring under the weight of a car when the wheels pass over a joint between the rails on the tie. A supplemental spring 10 is provided for the projecting end of the plate, which may be of any suitable form, such as a cylinder of rubber or other resilient material. This spring is socketed in a casting 11, as indicated by the dotted lines 12. The casting in turn is fastened to the base 3 of the receptacle by the stud 13, which fits into the opening 14. The supplemental spring 10 and casting 11 are placed in the receptacle through the open side. The abutting ends of the rails 15 rest on the projecting ends of the plates 6 and are fastened in place by means of the fish-plates 16 and bolts 17 and 18, said fish-plates being of any suitable form or construction desired. As shown, the fish-plates are formed with the upturned sides 19, which are adapted to clasp the web 20 of the rail by means of the bolts 17 passing through the sides of the fish-plates and the web. The lower portion of each side is formed with a flange 21, through which the bolts 18 pass and fasten the fish-plates to the projecting end of the plate 6 over the receptacle. The flanks 22 of each flange rest upon the plate 6. This construction of fish-plate produces a firm connection between the tie and the rails. By using the spring-plate 6 and the supplemental spring 10 a secure joint is also produced between the ends of the rails and the wear of wear of the parts is reduced.

In the construction used for supporting the rails between their ends a removable block 23 of wood or other inexpensive material is placed in the receptacle 3 through the open side. The rail is fastened to said block by means of the spikes 24, as shown in Figs. 5 and 6, and the supporting-block is fastened in the receptacle by means of the bolt 25. The block may be fastened in the receptacle by means of spikes instead of bolts when desired. In the construction of tie used between the ends of the rail the plate 6, which is shown in Fig. 1, is not used.

Having described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. A metallic railway-tie, consisting of a body in the form of an I-beam having an end

formed with a receptacle, a removable support fastened in said receptacle, and means for fastening the rail to said removable support.

5 2. A metallic railway-tie, consisting of a body in the form of an I-beam having receptacles on its ends, a removable support fastened in each of said receptacles, and means for fastening the rails to said removable supports.
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3. A metallic railway-tie, consisting of a body, which is in the form of an I-beam, a receptacle formed on each end of said body, a removable support in each of said receptacles, and means for fastening the rails to said supports.
15

4. A metallic railway-tie, consisting of a body in the form of an I-beam, a receptacle in each end of said body, a removable support in each of said receptacles, and means for fastening said supports in the receptacles and the rails to said supports.
20

5. A metallic railway-tie, consisting of a body in the form of an I-beam having a re-

ceptacle in each of its ends, each of said receptacles having an open side, a spring-support in each of said receptacles, and means for fastening the rail above said support and to said tie. 25

6. A metallic railway-tie, consisting of a body, a receptacle in each end of said body, a resilient support in each of the receptacles, a spring-plate resting upon said supports, and means for fastening the abutting ends of the rails to said plate. 30

7. A metallic railway-tie, consisting of a body in the form of an I-beam, a receptacle in each end of said body, a resilient support for the rails in each of said receptacles, and means for fastening said supports in the receptacles. 35

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

JOHN E. BITTIKOFFER.

Witnesses:

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