

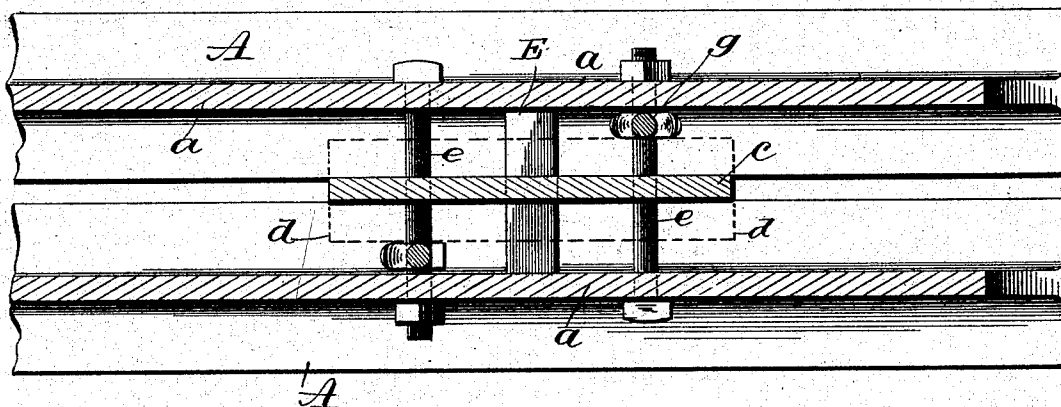
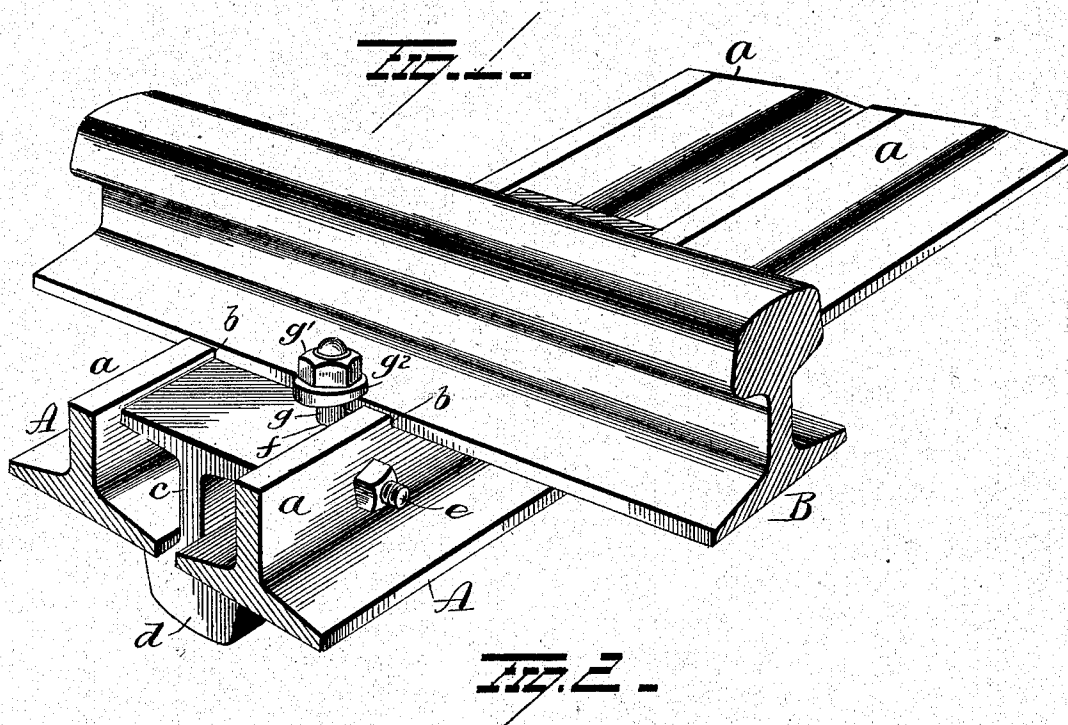
(No Model.)

2 Sheets—Sheet 1.

N. BENJAMIN.
RAILWAY TIE.

No. 505,020.

Patented Sept. 12, 1893.



Witnesses
C. S. Nottingham
G. F. Downing

Inventor
N. Benjamin.
By H. A. Dymond.
Attorney

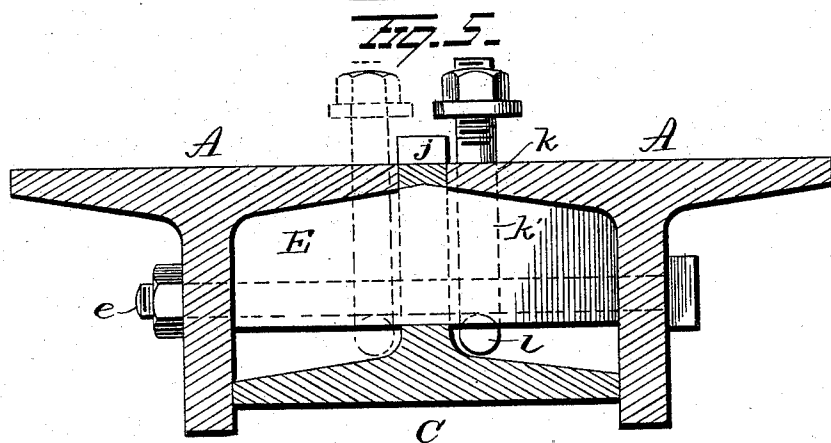
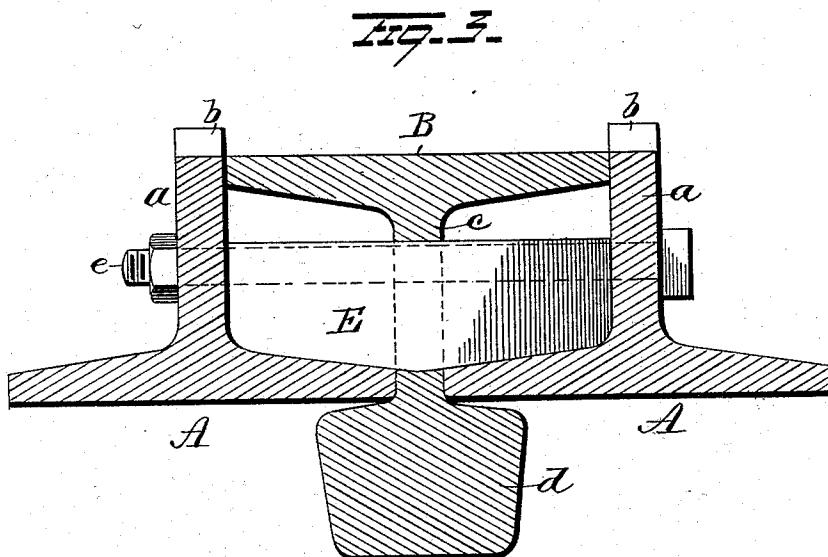
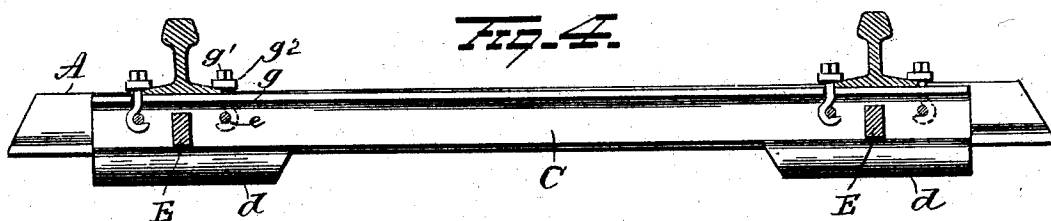
(No Model.)

2 Sheets—Sheet 2.

N. BENJAMIN.
RAILWAY TIE.

No. 505,020.

Patented Sept. 12, 1893.



Witnesses
E. H. Tillingham
G. F. Downing

Inventor
N. Benjamin
R. A. Durmon
Attorney

UNITED STATES PATENT OFFICE.

NEWTON BENJAMIN, OF ELMIRA, NEW YORK.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 505,020, dated September 12, 1893.

Application filed October 10, 1892. Serial No. 443,402. (No model.)

To all whom it may concern:

Be it known that I, NEWTON BENJAMIN, of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Railway-Ties; and I do hereby 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.

My invention relates to an improvement in metallic railroad ties,—the object being to produce a simple and efficient tie of sections of rails.

A further object is to produce a metallic railway tie which shall be cheap to manufacture and effectual in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a view illustrating my improvements. Fig. 2 is a horizontal sectional view. Fig. 3 is a cross section. Figs. 4 and 5 are views of modifications.

A, A, represent two sections of railroad rails having their treads removed and their webs *a* projecting upwardly, said webs being notched, as at *b* for the accommodation of the rail B of the track, and the rails A, A, being of sufficient length to accommodate both of said track rails. The rails A, A, of the tie are arranged side by side and a distance apart sufficient to permit the passage of the web *c* of a section of rail C,—which rail is inverted and the bottom of its flanges made to align with the bottom of the recesses or notches *a* and thus constitute a bed plate for the track rail B. The tread of the rail C projects beneath the rails A, A, and constitutes an anchor *d* for the tie and also a bearing or support for the rails A, A. Passing through the webs of the rails A, A, and C are bolts *e*, whereby to secure the parts of the tie together.

The flanges of the rail C are made with recesses *f*, through which tie bolts *g* pass. The lower ends of the tie bolts *g* are made hook-shaped or as eye bolts, to receive the bolts *e* and at their upper ends are screw threaded

for the reception of nuts *g'*,—washers *g''* being located on said bolts beneath the nuts and adapted to bear on the flanges of the railroad rail B and retain the latter in position.

In order that the weight brought to bear on the rail C shall be sustained by the inner flanges of the rails A, A, a block or brace E is employed. The block or brace E is passed through the web of the rail section C and is made of sufficient length to extend from one to the other of the webs of the rails A, A. The under face of the block E is made curved or inclined so that it will be adapted to the form of the flanges of the rails A, A. By arranging the flanges of the rails A, A, a short distance apart a natural water drain will be produced.

Instead of making the rails A, A, of sufficient length to accommodate both rails of the road, the tie may be made in two parts as shown in Fig. 4, in which case the rail C will be made continuous from the outside bearing of one track rail to the other. With this form of the invention the tread of the rail C will preferably be provided only at its ends, but it may, if desired, extend throughout the length of said rail. The block or brace E will also be employed with this form of the invention.

Instead of arranging the rails composing the tie as above set forth, they may be arranged as shown in Fig. 5. In that case, the rails A, A, are disposed with the bottoms of their flanges uppermost and the web of the rail C projecting between and slightly above them. The tread is removed from the rail C and the web of said rail is recessed, as at *j*, for the accommodation of the flanges of the railroad rail B, which latter also rests on the up-turned bottoms of the rails A, A. The inwardly projecting flanges of the rails A, A, are notched as at *k*, for the passage of tie bolts *k'*, whereby to fasten the rail B to the tie, said tie bolts being made hook-shaped or as eye bolts at their lower ends to receive bolts *l* passing through the webs of the rails A, A, C. In this form of the invention the rail C also acts as an anchor, made so by the space between the webs of the rails A, A. The rails A, A, and C in this form may be all made of sufficient length to accommodate

both rails of the track or the rails A, A, may be made in sections and the rail C continuous, after the manner shown in Fig. 3.

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

1. A railway tie composed of three rails or sections of rails rigidly secured together side by side, the central or intermediate rail engaging the outer rails at two points in different horizontal planes, substantially as set forth.

2. A railroad tie composed of three rails or rail sections secured together, the web of the central rail interposed between and bearing against the adjacent edges of flanges of the two outside rails and the outer edges of the flanges of the central rail engaging the webs of the two outside rails, substantially as set forth.

3. A railway tie composed of three rails or sections of rails the central rail extending in the opposite direction from the outer rails, the web of the central rail between the flanges of the outside rails and the flanges of the central rail bearing against the web of the outside rails and bolts passed through the three webs for securing the parts rigidly together, substantially as set forth.

4. A railway tie composed of a pair of outer rails or sections of rails having their treads removed and an inverted rail or rail section interposed between the outer rails or rail sections and secured to said rails or rail sections the tread of the central rail or rail section extending below and forming shoulders for the inside base flanges of the outer rails, substantially as set forth.

5. In a railroad tie, the combination with two rail sections arranged in proximity to each other, of an intermediate rail section having its web extending between the flanges of the first-mentioned rail sections, bolts passing through the webs of said rail sections, and tie bolts adapted to receive said bolts, said tie bolts passing through the flanges of the intermediate rail section and adapted to serve to secure the railroad rails to the tie, substantially as set forth.

6. In a railroad tie, the combination with two rail sections arranged in proximity to each other, of an intermediate rail section having its web projecting between the flanges

of the firstmentioned rail sections and having its tread beneath the same and adapted to constitute an anchor for the tie and a support for the firstmentioned rail sections, the upper edges of the several sections in approximately the same horizontal plane, to form a seat for the support of a rail, substantially as set forth.

7. In a railroad tie, the combination with two rail sections arranged side by side in proximity to each other, of an intermediate rail section having its web projecting between the first-mentioned rail sections, bolts connecting said rail sections together, a block passing through the web of the intermediate rail section and adapted to bear on the flanges of the first-mentioned rail sections, substantially as set forth.

8. In a railroad tie, the combination with two sections, each composed of two parallel rail sections, of an intermediate rail section having its web projecting between the first-mentioned rail sections and having its tread beneath the same, said intermediate rail section extending from the outside bearing of one track rail to the other, the ends only of the central portion of the intermediate rail section being provided with a tread portion, substantially as set forth.

9. A railroad tie composed of three rails or rail sections secured together, the central rail or rail section extending in an opposite direction from the outer rails and blocks inserted in the spaces between webs of the rails, said blocks reaching the entire distance from one web to the next adjacent web whereby the tie is strengthened at this point, substantially as set forth.

10. A railroad tie composed of three rails or rail sections the outer ones having their treads removed and the central one inverted with its tread located below the base flanges of the outer rails or rail sections, and blocks interposed in the spaces formed between the webs of the rails, substantially as set forth.

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

NEWTON BENJAMIN.

Witnesses:

H. B. CLEVELAND,
M. A. SMITH.