

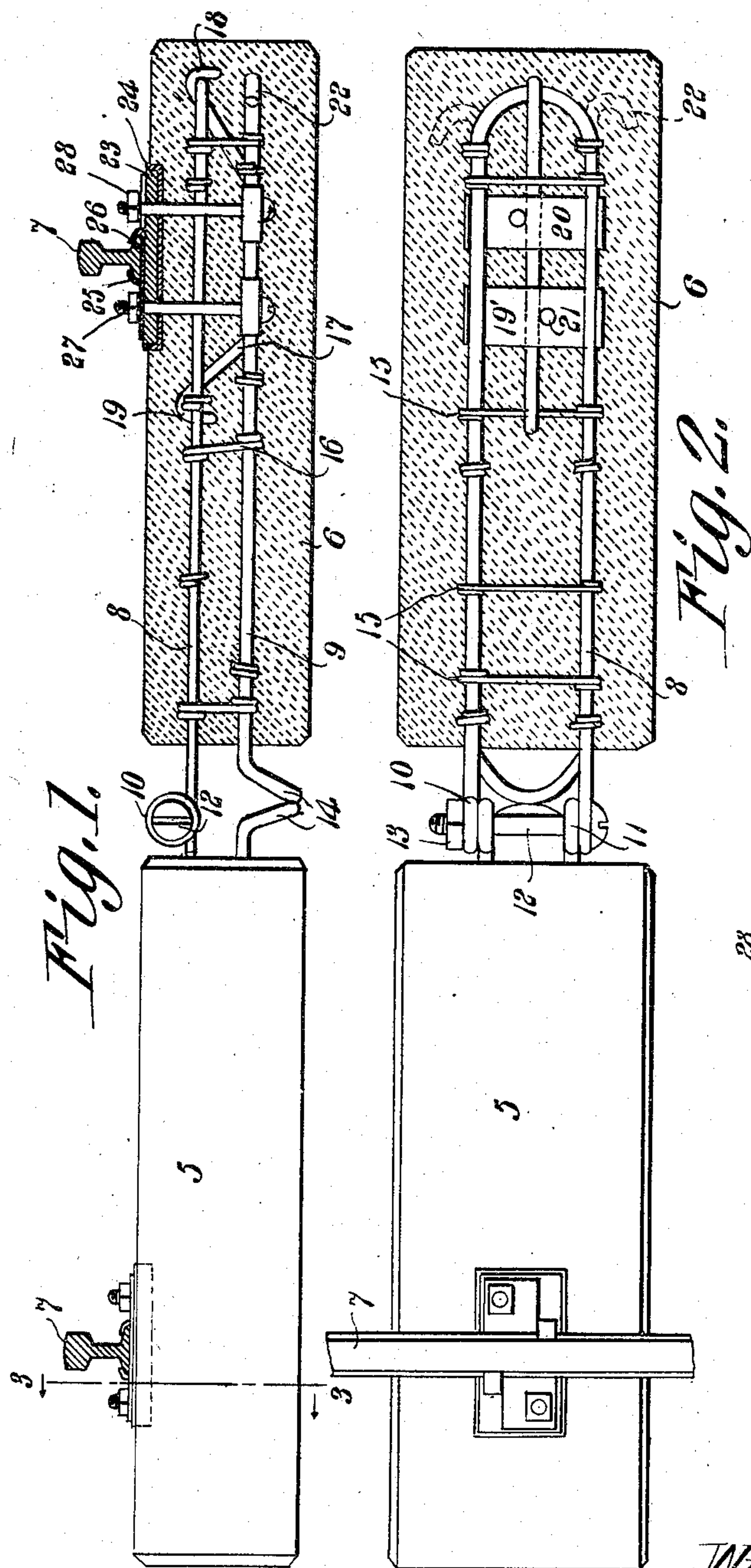
No. 848,155.

PATENTED MAR. 26, 1907.

W. A. BRYANT.

REINFORCED CONCRETE CROSS TIE.

APPLICATION FILED JAN. 14, 1907.



WITNESSES:

E. V. Stewart
L. McKee

William A. Bryant,
INVENTOR.

By *C. Snow & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM A. BRYANT, OF WETUMPKA, ALABAMA, ASSIGNOR OF ONE-FOURTH
TO THOMAS W. ROUSE, OF WETUMPKA, ALABAMA.

REINFORCED CONCRETE CROSS-TIE.

No. 848,155.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed January 14, 1907. Serial No. 352,240.

To all whom it may concern:

Be it known that I, WILLIAM A. BRYANT, a citizen of the United States, residing at Wetumpka, in the county of Elmore and State of Alabama, have invented a new and useful Reinforced Concrete Cross-Tie, of which the following is a specification.

This invention relates to reinforced concrete railway-ties, and has for its object the provision of a strong, durable, and comparatively inexpensive tie which shall effectually resist longitudinal, vertical, and lateral strains incident to the passage of cars and other railway rolling-stock.

A further object of the invention is to provide a railway-tie formed of a plurality of sections detachably secured together, whereby the same may be quickly united and positioned beneath the road-bed and readily disconnected to facilitate handling and transporting the tie.

A further object is to reinforce and strengthen the tie by the provision of spaced longitudinal rods or loops, and, further, to provide means for supporting said rods or loops in spaced relation during the formation of the tie.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability, and efficiency.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation, partly in section, of a cement railway-tie constructed in accordance with my invention. Fig. 2 is a top plan view, partly in section, of said tie. Fig. 3 is a transverse sectional view taken on the line 3-3 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved railway-tie is preferably formed of two sections 5 and 6 to permit the same to be conveniently positioned beneath the rails 7, said sections being molded or

otherwise formed of cement, concrete, or other suitable material and reinforced and strengthened by spaced longitudinal rods 8 and 9. The rods 8 and 9 are preferably in the form of loops, as shown, and are embedded in the concrete, cement, or other plastic material with the closed ends of the loops disposed in opposite directions.

The arms forming the open end of the upper loop 8 are extended beyond the adjacent tie-section 6 and bent or coiled to form coincident eyes 10, which register with similar eyes 11, formed in the upper reinforcing-loop of the tie-section 5, thereby to permit the passage of a connecting-bolt 12. The bolt 12 forms a pivotal connection between the tie-sections 5 and 6 and is retained in position by means of a clamping-nut 13, which engages the threaded end of the bolt 12, thereby to force the eyes 10 and 11 in engagement with each other.

The closed end of the lower loop 9 of each section is extended beyond the adjacent end of the latter and deflected downwardly to form inclined bearing members 14, which interengage, and thus form a yieldable brace for the tie-sections and serve to receive the strains or jars incident by the passage of cars or other rolling-stock. The upper ends of the loops 8 and 9 are supported in spaced relation to each other during the formation of the tie-sections by means of suitable transverse and vertical connecting rods or wires 15 and 16, the opposite ends of which are coiled or otherwise twisted around the side bars of the loop, as shown. The tie is further reinforced and strengthened by the provision of longitudinal truss-bars 17, one end of each of which is bent upwardly and provided with a terminal hook 18, which engages the closed end of the upper reinforcing-loop 8, while the opposite end of the truss-bar is provided with a similar loop 19, which engages the adjacent transverse connecting-wire 15, as shown.

Interposed between the truss-rod 17 and the parallel arms of the lower reinforcing-loop 9 are transverse supporting-plates 19' and 20, provided with bolt holes or apertures 21 and having their opposite ends coiled around or otherwise rigidly secured to the side bars of the lower loop 9, as best shown in Fig. 1 of the drawing. Attention is here

called to the fact that the truss-bar 17 extends beneath the reinforcing-plates 20 and 19' and thus serves to assist in supporting the same in position on the parallel arms of the lower supporting-loop 9. The arms forming the open end of the loop 9 are deflected laterally to form terminal hooks 22, which are embedded in the concrete, cement, or other material forming the tie-sections and which serve as anchoring members.

Embedded in the concrete at the upper surface of each tie-section is a block or cushioning member 23, the latter being preferably inclosed in a metal casing or housing 24, countersunk in the upper surface of the tie, so that the block or cushioning member will be disposed substantially flush with the upper surface of the ties. Mounted on the upper surface of the block 23 is a rail-engaging clamp, preferably formed of a single metallic plate, having its opposite longitudinal edges slit longitudinally to form oppositely-disposed ears or lugs 25, adapted to be folded or pressed downwardly on the base of the rails 7, and thus lock the rails in position on the ties.

As a means for retaining the block or plate 26 in position on the tie-sections, suitable clamping-bolts 27 are employed, the latter being threaded through the perforations 21 in the plates 19' and 20 and having their upper ends extended through similar openings in the block 23 and plate 26 for engagement with suitable clamping-nuts 28.

In using the device the adjacent sections of the tie are positioned beneath the rails and fastened together by means of the coupling member or bolt 12, after which the plates 26 are positioned on the blocks 23 with the rails resting on said plates and the ears and lugs 25 bent downwardly in engagement with the base of the rail, as clearly shown in Fig. 1 of the drawing, thus locking the rails against longitudinal and lateral displacement. In order to replace either tie-section should the same for any cause become broken or otherwise injured, it is merely necessary to move the coupling-pins 12, when the two sections may be readily detached and withdrawn laterally from beneath the rails. It will of course be understood that any number of reinforcing-bars may be employed and that the sections may be further reinforced and strengthened by the provision of auxiliary vertical and transverse connecting-wires.

Attention is called to the fact that the deflected ends 14 of the lower reinforcing-loops 9 by engagement with each other serve to receive and absorb any jar or impact, and thus prevent cracking or otherwise disintegrating the cement forming the body of the tie.

From the foregoing description it will be seen that there is provided an extremely simple, inexpensive, and efficient device admirably adapted for the attainment of the ends in view.

Having thus described the invention, what is claimed is—

1. A railway-tie including mating sections, and spaced reinforcing members embedded in said sections and each having one end thereof extended beyond the adjacent section and deflected laterally for engagement with the correspondingly-deflected end of the reinforcing member of the mating section.

2. A railway-tie including mating sections, and reinforcing-loops embedded in each tie-section and having their closed ends extended beyond the adjacent section and bent downwardly for engagement with the deflected end of the loop of a mating section.

3. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in each section and having their closed ends extended in opposite directions, and means for connecting said sections.

4. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the closed end of one of the loops of each section being extended beyond the adjacent end of said section and deflected downwardly for engagement with the correspondingly deflected end of the reinforcing-loop of the mating section.

5. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, means for supporting said loops, and means engaging one of the loops of each section for detachably securing the same together.

6. A railway-tie including a plurality of detachable sections, spaced loops embedded in each section and having their closed ends extended in opposite directions, eyes formed in the open end of one of the loops of each section, and a pin extending through said eyes for detachably uniting said sections.

7. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open ends of the upper loops being provided with terminal eyes and the closed ends of the lower loops being deflected downwardly for engagement with each other, and a pin passing through the eyes for detachably uniting the sections.

8. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections, and a longitudinal truss-rod disposed between the walls of the loops and operatively connected therewith.

9. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, tie-wires connecting the walls of said loops, and a longitudinal truss-rod extending be-

tween the loops and having its opposite ends provided with hooks one of which engages the closed end of the adjacent loop and the other one of the tie-wires.

5 10. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open end of the upper loop of each tie being provided with coincident eyes and the open end of the lower loop being extended laterally to form anchoring members, the closed end of the anchor-carrying loop being deflected downwardly for engagement with the correspondingly-deflected end of the anchor-carrying loop of an adjacent section, and a pin passing through the eyes for detachably uniting said sections.

11. A railway-tie including a plurality of detachable sections, a reinforcing-loop embedded in each section and having its closed end extended beyond the adjacent end of said section and deflected downwardly for engagement with the correspondingly-deflected end of the loop of the mating section, perforated plates connecting the walls of the loops, cushioning members carried by the tie-sections, rail-engaging members mounted on the cushioning members and clamping bolt extending through the transverse plates, cushioning members and tie-engaging members for locking the latter in position on the tie-sections.

12. A railway-tie including a plurality of detachable sections, reinforcing-loops embedded in said sections, perforated transverse plates connecting the walls of said loops, metallic housings embedded in the upper surface of the sections, cushioning members seated in said housings, rail-engaging members carried by the cushioning members, and clamping-bolts passing through the perforations in the transverse plates and engaging the cushioning and rail-engaging members for locking the same in position on the tie-sections.

13. A railway-tie including a plurality of detachable sections, a reinforcing-loop embedded in each section, transverse plates connecting the walls of the loops, a truss-rod extending beneath the plates, cushioning-

blocks embedded in the upper surface of the tie-sections, a rail-engaging member carried by the cushioning-block and having its opposite edges bent to form lugs adapted to engage the rails, and fastening devices carried by the plates for clamping the rail-engaging member and block in position on the tie.

14. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open end of the upper reinforcing-loop of each section being provided with coincident eyes and the lower reinforcing-loop being deflected downwardly for engagement with the correspondingly-deflected end of the lower reinforcing-loop of the adjacent section. transverse plates connecting the walls of the lower loop, cushioning-blocks embedded in the upper surface of the tie-sections, rail-engaging members carried by the cushioning-blocks, fastening devices extending through the transverse plates for clamping the cushioning-block and rail-engaging members in position on the tie, and coupling-pins extending through the eyes of the upper reinforcing-loops.

15. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open ends of the upper loops being detachably connected and the closed ends of the lower loops being deflected laterally for engagement with each other, a transverse plate connecting the walls of one of the loops, longitudinal truss-bars extending beneath the plates, cushioning-blocks embedded in the upper surface of the tie-sections, rail-engaging members carried by the blocks, and fastening devices extending through the transverse plate for clamping the cushioning-block and rail-engaging member in position on the tie-section.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM A. BRYANT.

Witnesses:

D. D. ASKEW,
F. LOYD TATE.