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W. A. BRYANT.
REINFORCED CONCRETE CROSS TIE.
APPLICATION FILED MAY 31, 1906.

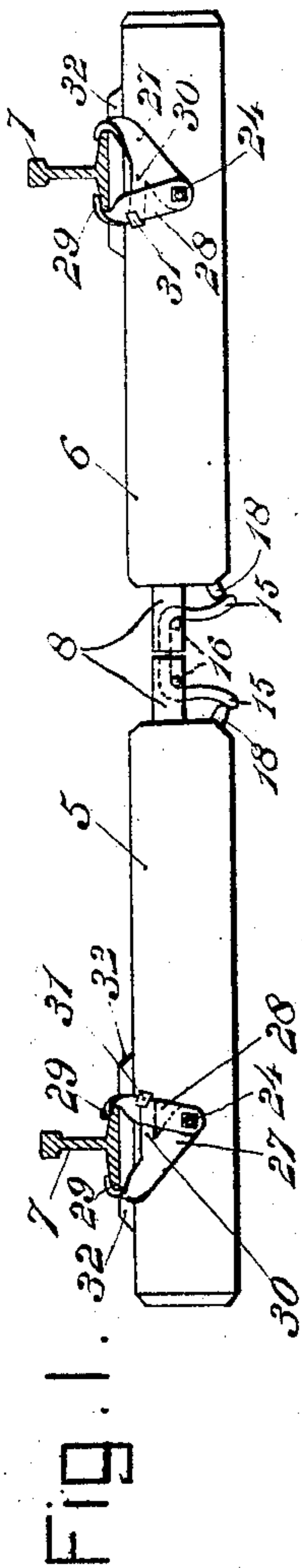


Fig. 1.

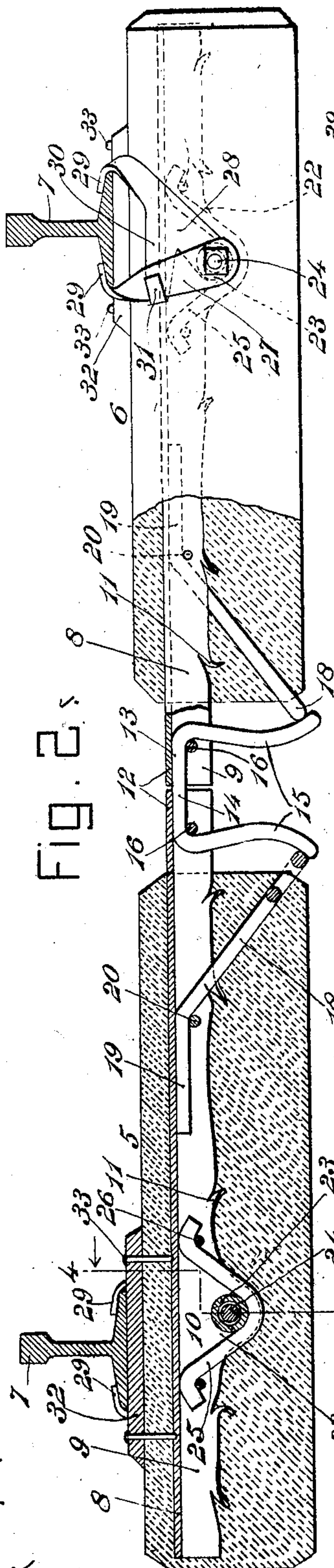


Fig. 2.

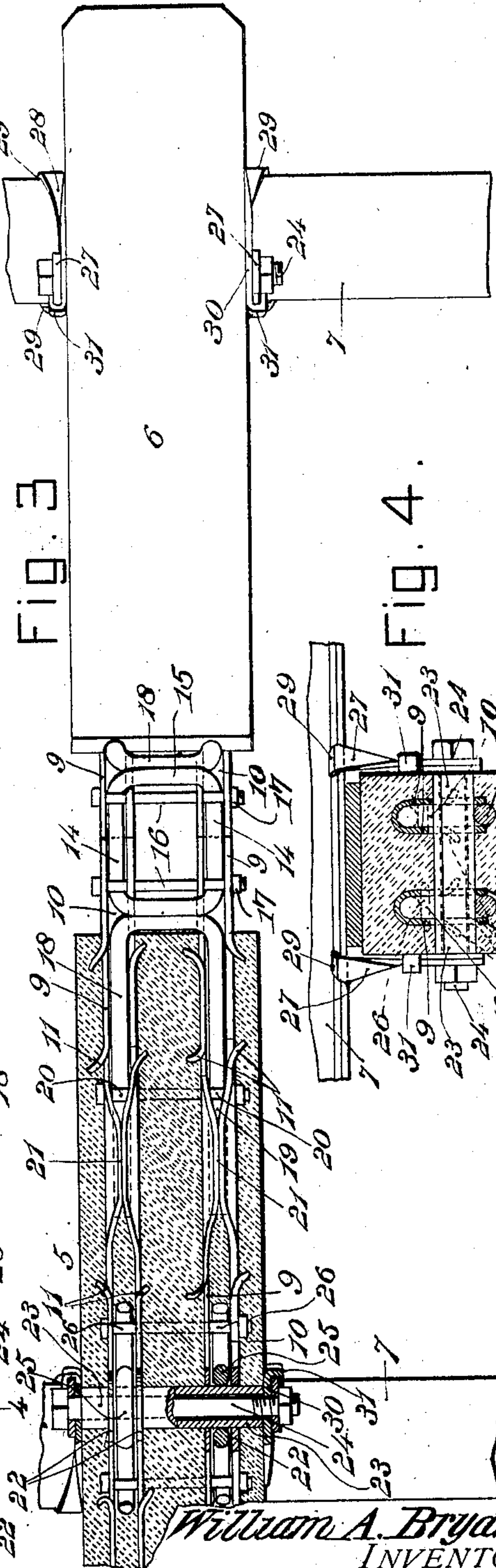


Fig. 3.

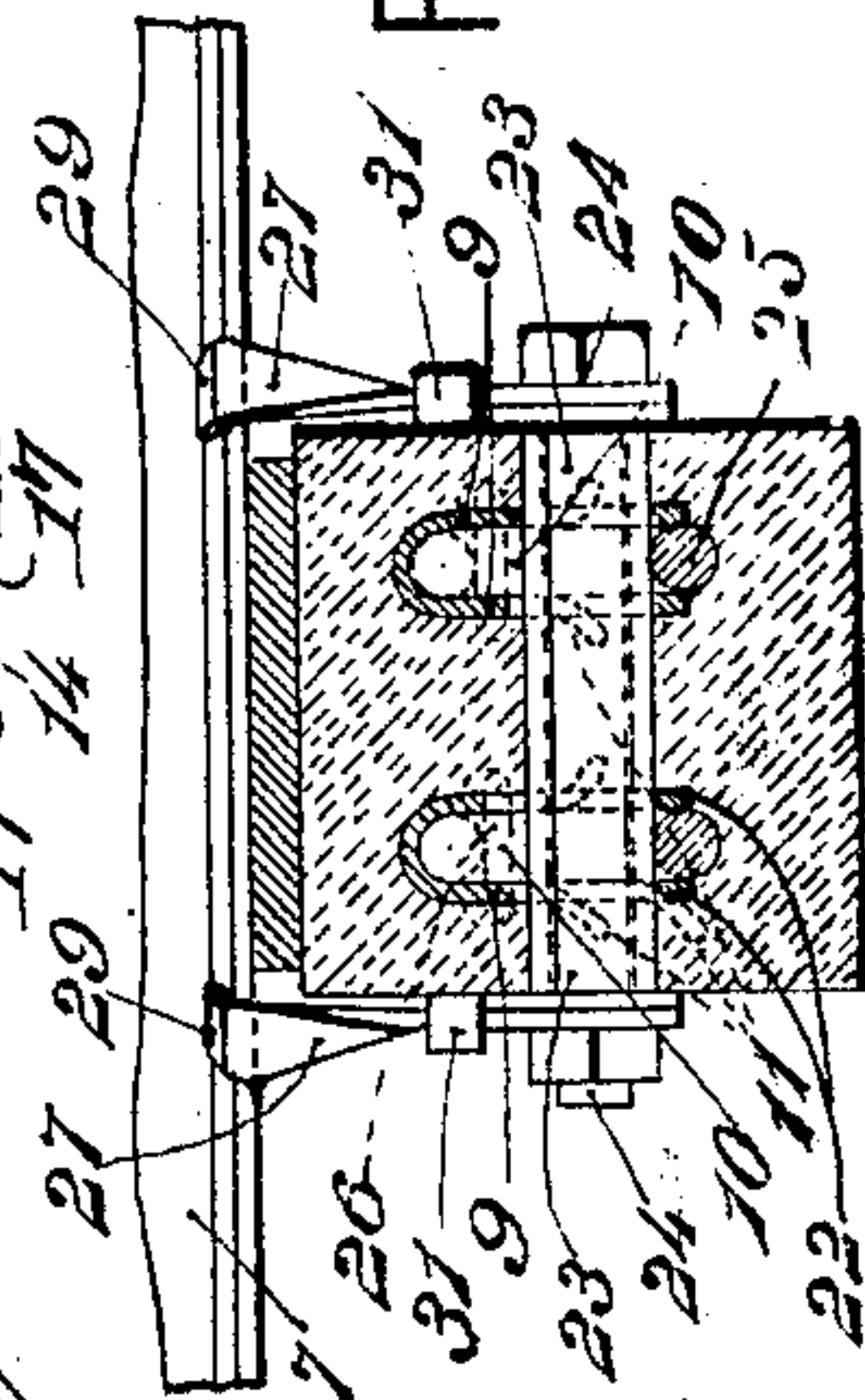


Fig. 4.

WITNESSES:

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REINFORCED CONCRETE CROSS-TIE.

No. 828,837.

Specification of Letters Patent.

Patented Aug. 14, 1906.

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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 to provide a strong, durable, and efficient tie which when placed beneath the rails will form a solid bed or support for the latter and 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 tie comprising a plurality of sections, the adjacent ends of which are connected by coupling members which serve to yieldably support said sections in horizontal alinement, and thus prevent injury to the concrete body portion of said tie.

A further object is to provide a plurality of reinforcing-bars provided with seating-recesses for the reception of the coupling members and adjacent braces, said bars being formed with lateral spurs adapted to be embedded in the cement, concrete, or other material forming the body of the tie.

A further object of the invention is to provide each tie-section with a sleeve or casing adapted to receive and protect the transverse securing-bolts, and, further, to provide a pair of clamping members pivotally mounted for swinging movement on the bolts and adapted to engage the flange or base of the rail on each side thereof.

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

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 of a reinforced concrete railway-tie constructed in accordance with my invention. Fig. 2 is an enlarged longitudinal sectional view of the same. Fig. 3 is a bottom plan view, partly in section. Fig. 4 is a transverse sectional view taken on the line 4 4 of Fig. 2.

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

The improved railway-tie is preferably formed in 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 bars 8, which preferably extend the entire length of the tie, as shown.

The reinforcing-bars 8 are provided with spaced depending flanges 9, defining a longitudinal seating-recess 10, the free edges of the flanges 9 being cut or severed to form a series of spaced spurs or projections 11, adapted to be embedded in the cement or concrete, and thereby anchor the reinforcing-bars.

One end of each of the longitudinal reinforcing-bars is preferably extended beyond the adjacent end of the cement body portion, as indicated at 12, and seated in the recesses 10 at the free end of the longitudinal bars is a coupling member 13. The coupling member 13 is preferably formed of a single piece of metal, an intermediate portion of which is bent to form a pair of spaced horizontally-disposed bars 14, while the free ends of the metal are bent to form depending loops 15, the terminals of which are curved laterally in engagement with braces 18 and serve to yieldably support the sections, and thus prevent crushing or shattering the concrete body of the tie. The coupling members 13 are locked in position by transverse rods or bolts 16, extending through suitable perforations in the depending flanges 9 and having their terminals threaded for the reception of nuts 17.

As a means for bracing and strengthening the free ends of the coupling members 15 suitable U-shaped braces 18 are secured to the longitudinal bars 8 with their free or closed ends bearing against the loops 15 and with their fixed ends seated between the flanges 9 of said bar. The open or separated ends

of the braces 18 are bent laterally at 19 and retained in position by transverse pins or bolts 20, the metal forming the depending flanges 9 being bent inwardly, as indicated at 21, to form a housing or closure for the extension 19 of said braces.

The longitudinal bars 8 are formed with depending perforated ears 22, in which are seated transverse sleeves 23, adapted to receive securing-bolts 24, there being suitable hangers or supports 25, extending beneath the sleeve 23 and secured between the flanges of the bars 8 in any suitable manner, as by bolts 26. Pivotaly mounted for swinging movement on each end of the bolts 24 are coupling members 27 and 28, each provided with a terminal hook 29, adapted to engage and clamp the flange or base of the rail 7, one of said members being provided with a laterally-extending arm 30, the free end of which is bent laterally in engagement with the adjacent clamping member, as indicated at 31. Interposed between the rail and the adjacent surface of the body of the tie is a cushioning member, preferably in the form of a wooden block or strip 32, retained in position on said tie by pins or bolts 33, preferably embedded in the concrete or cement and adapted to engage suitable openings or perforations in said blocks, as shown.

In using the device, adjacent sections of the tie are positioned beneath the rails and fastened together by means of the coupling member 13. In order to replace either section should the same for any cause become broken or otherwise injured, it is merely necessary to remove the pins 16, 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 addition of auxiliary lateral braces similar in construction to the braces employed for supporting coupling members.

From the foregoing description it is thought that the construction and operation of the device may be readily understood by those skilled in the art, and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. A railway-tie comprising a plurality of cement sections, spaced longitudinal reinforcing-bars embedded in said sections and extending laterally beyond the adjacent ends of the same, and a coupling member connecting the adjacent ends of said bars and serving to yieldably support the same in horizontal alinement.

2. A railway-tie comprising a plurality of detachable sections, and a coupling member connecting the sections and provided with depending extensions the ends of which are

bent laterally in engagement with adjacent sections for yieldably supporting said sections in alinement.

3. A railway-tie comprising a plurality of detachable sections, a coupling member connecting said sections, and braces carried by each section and bearing against said coupling member.

4. A railway-tie comprising spaced sections, bars extending longitudinally of said sections, a coupling member connecting the adjacent ends of the bars and having its free ends extended laterally to form yieldable supports, and lateral braces secured to the bars and bearing against the free ends of the coupling member.

5. A railway-tie comprising spaced cement sections, bars extending longitudinally of each section and provided with depending flanges, and a coupling member seated between the flanges of the bars and having its free ends extended laterally to form yieldable supports for said sections.

6. A railway-tie comprising spaced cement sections, reinforcing-bars extending longitudinally of the sections and provided with spaced depending flanges, a coupling member having an intermediate portion thereof bent to form a horizontal bar seated between the flanges at the adjacent ends of the reinforcing-bars and having its opposite ends bent to form depending loops, and lateral braces secured to the reinforcing-bars and bearing against said loops.

7. A railway-tie comprising spaced cement sections, reinforcing-bars extending longitudinally of said sections, a coupling member connecting the adjacent ends of the longitudinal bars, sleeves secured to the bars and extending transversely through the cement sections, and securing-bolts seated in said sleeves.

8. A railway-tie comprising spaced cement sections, reinforcing-bars extended longitudinally of the sections and each having one end thereof extending laterally beyond the adjacent concrete section, a coupling member for connecting the adjacent ends of the reinforcing-bars, sleeves extending transversely of the sections, securing-bolts disposed within the sleeves, and hangers carried by the bars and engaging said sleeves.

9. A railway-tie comprising spaced cement sections, reinforcing-bars extending longitudinally of the sections and provided with depending flanges the free edges of which are formed with lateral spurs, one end of each bar being extended beyond the end of the adjacent section; a coupling member seated between the flanges of the bars at the meeting ends thereof, and lateral braces one end of each of which is seated between the flanges and the opposite ends thereof bent downwardly for engagement with the coupling member.

10. A railway-tie comprising spaced ce-

ment sections, reinforcing-bars extended longitudinally of the sections and provided with spaced depending flanges formed with perforated ears, one end of each bar being extended beyond the end of the adjacent section, a coupling member connecting the adjacent ends of the bars, transverse sleeves seated in the perforations in the ears, bolts arranged with the sleeves, hangers engaging the sleeves and seated between the flanges of the reinforcing-bars, lateral braces each having one end thereof seated between the flanges and its opposite end bearing against the coupling member, pins extending transversely through the flanges and engaging the coupling member, said flanges being bent laterally to form housings for the ends of the braces.

11. A railway-tie comprising spaced concrete sections, reinforcing-bars extending longitudinally of said sections and each having one end thereof extending laterally beyond the end of the adjacent section, said bars being provided with depending flanges, a

coupling member seated between the flanges at the adjacent ends of the reinforcing-bars, and locking devices extending transversely through said flanges and engaging the coupling member.

12. A railway-tie comprising spaced concrete sections, reinforcing-bars extending longitudinally of the sections, a coupling member connecting the adjacent ends of the bar, bolts extending transversely through the concrete sections, a pair of clamping members pivotally mounted for lateral movement on each of the bolts and adapted to engage a railway-rail, one of said sections being provided with a lateral extending arm having a hooked terminal for engagement with the adjacent clamping member.

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:

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