

RAILROAD TIE SURFACE LINER
 21829

Eng. 21,829 of 1905.

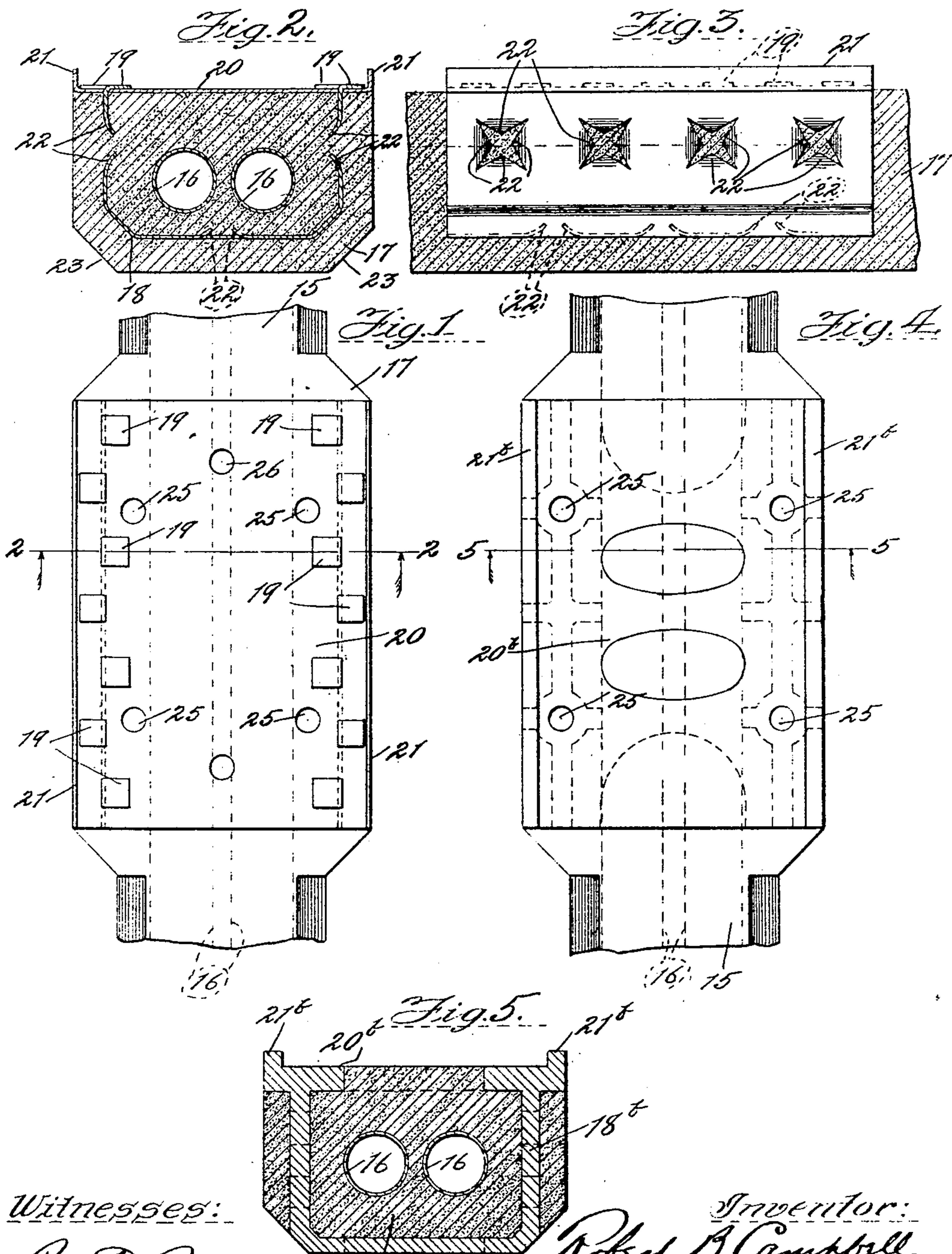
No. 810,393.

PATENTED JAN. 23, 1906.

R. B. CAMPBELL.
 RAILROAD TIE.

APPLICATION FILED OCT. 12, 1905.

2 SHEETS—SHEET 1.



Witnesses:

Edw. Perry
 Minnie C. Hunter

Inventor:

Robert B. Campbell.
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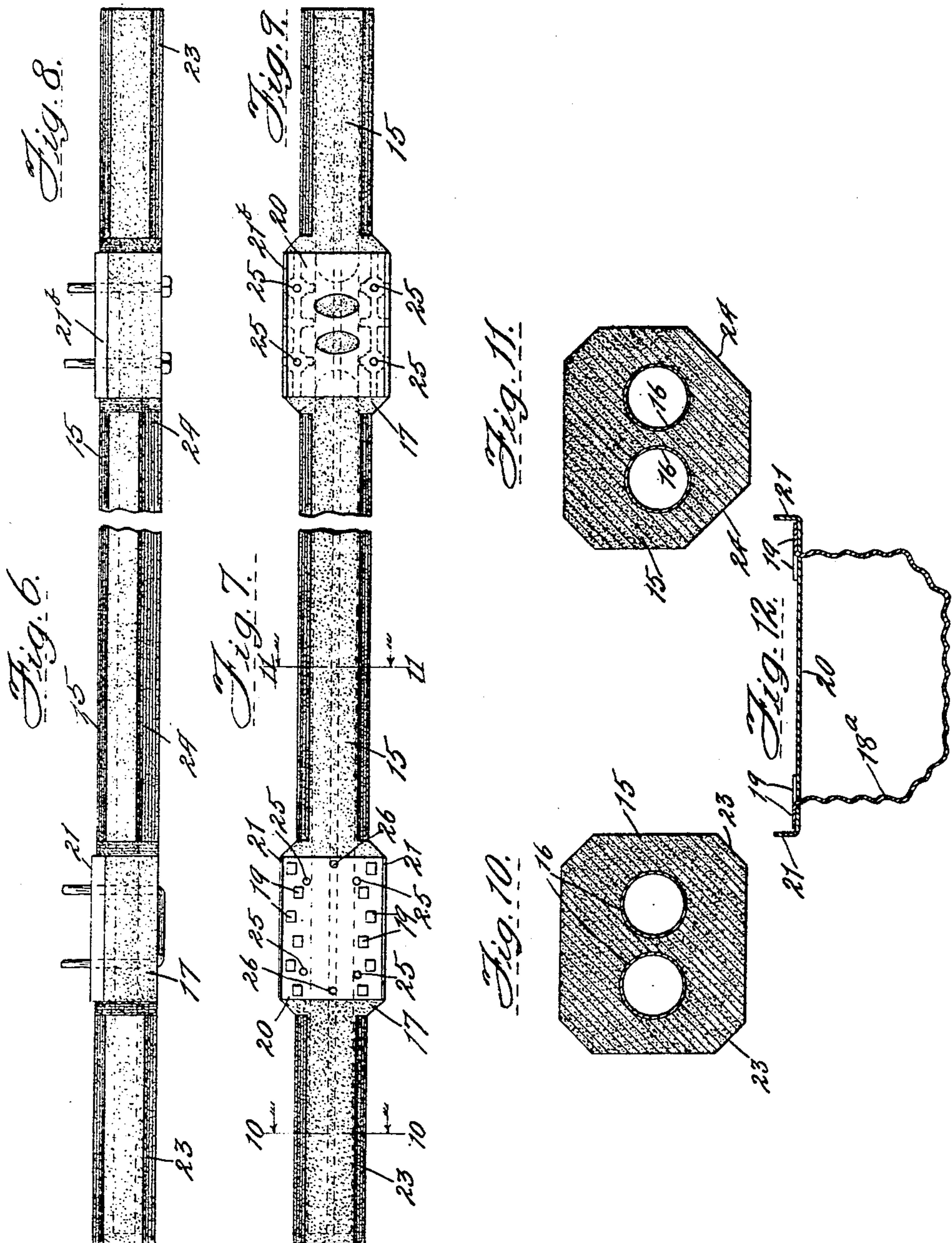
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UNITED STATES PATENT OFFICE.

ROBERT B. CAMPBELL, OF JOLIET, ILLINOIS, ASSIGNOR OF ONE-HALF TO HIMSELF AND ONE-HALF TO ALEXANDER F. BANKS, OF EVANSTON, ILLINOIS.

RAILROAD-TIE.

No. 810,393.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed October 12, 1905. Serial No. 282,402.

To all whom it may concern:

Be it known that I, ROBERT B. CAMPBELL, a citizen of the United States, residing at Joliet, in the county of Will, State of Illinois, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates particularly to railroad-ties formed from cement or concrete or other suitable plastic material, with which are combined one or more longitudinally-disposed metal parts, such as an iron tube, embedded in the plastic material. Ties of this general description are old; but my invention has for its objects to provide means for imparting greater strength to the tie as a whole than has been attained in former constructions, to provide an improved construction for affording a better seat for the plates that are commonly interposed between the base of the rail and the tie, to improve the shape of the tie, so that it will rest more securely on the ground and be less liable to become broken or disintegrated by the passage of trains, and to improve generally the construction of railroad-ties of this class.

In the drawings, Figure 1 is a plan view of that portion of my improved tie over which the rail is laid. Fig. 2 is a cross-section at line 2 2 of Fig. 1. Fig. 3 is a side elevation of the U-shaped support shown in Fig. 2, the tie-body being shown in section. Fig. 4 is a view similar to Fig. 1, but showing a modification in the construction of the U-shaped support device. Fig. 5 is a cross-section at line 5 5 of Fig. 4. Fig. 6 is a side elevation of a portion of a tie embodying therein the devices shown in Figs. 1, 2, and 3. Fig. 7 is a plan view of the portion of the tie shown in Fig. 6. Fig. 8 is a view similar to Fig. 6, but showing the modification illustrated in Figs. 4 and 5. Fig. 9 is a plan view of the devices shown in Fig. 8. Fig. 10 is a section taken at line 10 10 of Fig. 7. Fig. 11 is a section taken at line 11 11 of Fig. 7. Fig. 12 is an end view showing another modification in the construction of the U-shaped support and its top piece.

Referring to the several figures of the drawings, in which corresponding parts are indicated by the same reference-numerals, 15 indicates the body of the tie, formed of a suitable plastic material, such as cement or

concrete. 16 indicates two interior metal strengthening-cores, which in the construction shown are in the form of tubes. These core-pieces extend from end to end of the tie. Two of such cores are shown; but it is evident that one core only may be employed, if so desired.

17 indicates laterally-enlarged portions of the tie, one such enlarged portion being near each end of the tie and at the place thereon where the rail is to be supported by the tie. Within each enlarged portion 17 is placed a U-shaped support 18, the open ends of such support being toward the ends of the tie, which arrangement of supports enables them to pass around the interior supporting cores or tubes 16 without coming in contact therewith and yet at the same time allow such U-shaped supports to be embedded in the material of the tie-body. The upper ends of the sides of these U-shaped supports terminate in tongues 19, which pass through suitable openings in a cover-plate 20, that rests upon the top of the enlarged portion 17 of the tie-body 15, such tongues being then alternately turned inward and outward and pressed down flat, as clearly shown in Fig. 2, whereby the cover-plate 20 is held firmly in position. As shown, this cover-plate 20 has at each side an upturned flange 21, between which flanges a suitable plate, of lead, wood, or other material, is adapted to fit and upon which the rail rests, as usual. As shown, the sides and bottom of the U-shaped support are cut at intervals, so as to form prongs 22, which are bent inward, so as to hold the said support 18 with great firmness in the material of which the tie-body is composed.

It has been found desirable in ties of this class to bevel the lower edges of the tie; but I have discovered that the life of the tie is apt to be much much greater if the central portion of the tie has its lower edges beveled very considerably more than the lower edges of that portion of the tie between the end and the enlarged portion 17, and I have embodied such construction in the tie here illustrated, the smaller bevel at the ends of the tie being indicated by 23, while the large bevel at the central portion of the tie is indicated by 24. By making the center of the bottom face of the tie of less width than the end portions by beveling the lower edges, as described, "center binding," as it is termed, of the tie is prevent-

ed. This center binding is caused by the tamping of the earth beneath the center of the tie, due to vibrations or oscillations of the tie as trains pass over it. By beveling the tie in this manner it is obvious that a less surface exposed horizontally to the bottom of the tie will give less resistance and will not tamp to the extent that a broad surface would. Such lessening of the tamping results in longer life to the tie.

In Fig. 12 I have illustrated the U-shaped support as being formed of corrugated sheet metal, such support in that figure being indicated by 18^a. Its cover-plate is precisely the same as the cover-plate indicated in the construction hereinbefore described and is therefore indicated by the same reference-numeral—to wit, 20—and the locking-tongues being the same as in the first-described construction are indicated as in the former-described construction.

Both forms of U-shaped supports—that is, the one made from the plain material and the one made from the corrugated material—are adapted to be made from sheet metal stamped in the required form.

In Figs. 4, 5, 8, and 9 I have illustrated a form of support in which the U-shaped portion and its cover-plate are formed integral by casting. This U-shaped support in these figures I have indicated by 18^b, the cover-plate that is formed therewith by 20^b, and the vertical flanges on the cover-plate by 21^b.

In all of the cover-plates shown there are provided holes 25 near the sides and a hole 26 near each end, the side holes 25 being adapted to receive bolts—such, for example, as shown in Fig. 6 or 8—by means of which clips are attached in place against opposite sides of the base of the rail in order to secure such rail in place, while the holes 26 are provided for receiving bolts that are adapted to engage chairs that hold the rails in place, as is common in some forms of railroad construction.

In the sides, bottom, and top of the solid U-shaped support of Figs. 4, 5, 8, and 9 I prefer to form openings into which the plastic material may pass, which of course tends to bind the said support more firmly in place, and by the plastic material filling the openings in the sides this mass of material becomes a homogeneous mass and is less liable to become disintegrated or fall away from the U-shaped support. In Figs. 4, 5, and 9 the openings referred to in the top plate are clearly shown, and in Fig. 5 the openings in

the sides and bottom are indicated by dotted lines. Openings for the same purpose may be formed, if desired, in the corrugated sheet-metal support illustrated in Fig. 12.

By arranging those parts which are herein referred to as “U-shaped supports” so that their open ends are toward the ends of the ties the full strength of the supports is obtained, as they of course do not form any obstruction to the longitudinal cores or tubes, and consequently no cutting of the sides of such U-shaped supports is necessary, as has been the case with some constructions employing a support in connection with an interior longitudinal core.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, said support arranged with its open ends toward the ends of the tie, and a cover-plate resting upon said support, substantially as specified.

2. In a railroad-tie, the combination of a tie-body formed of plastic material, an interior core, and a substantially U-shaped support surrounding said core, said support arranged with its open ends toward the ends of the tie, with a cover-plate attached to said support, substantially as specified.

3. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, said support arranged with its open ends toward the ends of the tie and provided with projections, in combination with a cover-plate attached to said support, substantially as specified.

4. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, and a cover-plate resting upon said support, said cover-plate having flanges at opposite edges, substantially as specified.

5. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, and provided at its upper ends with tongues, and a cover-plate adapted to be secured to said support by said tongues, substantially as specified.

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Witnesses:

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