

W. G. CHIPLEY.
CROSS TIE.

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1,040,146.

Patented Oct. 1, 1912.

Fig. 1.

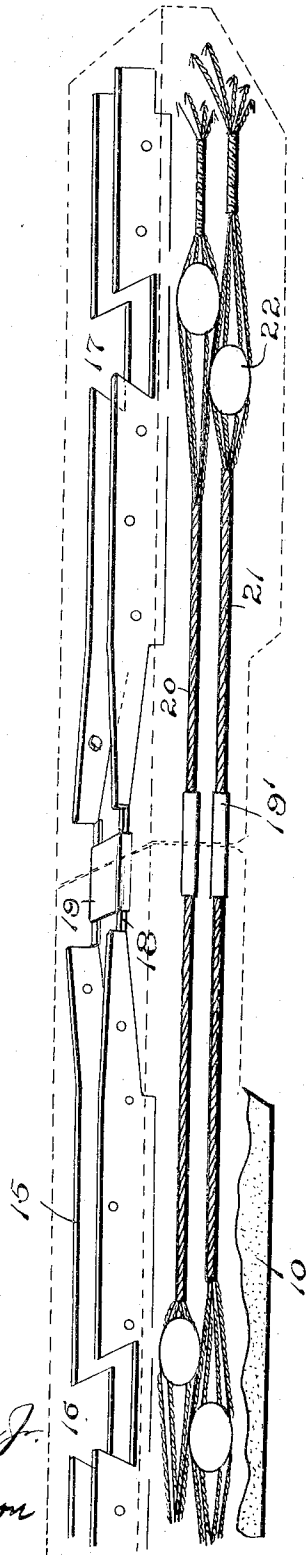


Fig. 2.

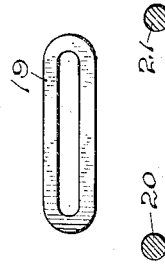
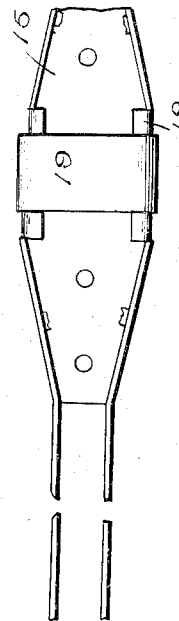


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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CROSS-TIE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM G. CHIPLEY, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Cross-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.

This invention relates to cross ties.

Briefly described, the invention includes a structure of concrete formed preferably in two sections connected by reinforcing members which are protected by a covering device of suitable material, in order to prevent the oxidation of the reinforcing means at the point which would otherwise be exposed to the elements.

The invention further consists in the employment of an upper reinforcing member which may be channel shaped in cross section for the greater portion of its length, being, however, flattened at the point where it extends from one tie section to the other, such flattened portion being surrounded by a flexible covering consisting of lead or other suitable material which will prevent the oxidation of the metal.

Still further, the invention includes a cable or cables extending lengthwise of the tie, the cable passing through a flexible tubular member and forming therewith a telescoping tubular joint.

In the accompanying drawings forming part of this application, Figure 1 is a view of the reinforcement in perspective, the tie being shown in dotted lines; Fig. 2 is a diagrammatic view showing the relation of the protective casing and the cable reinforcement, and Fig. 3 is a detail view showing the middle portion of the channel reinforcement, with the casing applied.

The tie formed of concrete is indicated by 10 and it comprises two sections which are but slightly separated along the central transverse line, the sections being connected by the reinforcing members extending the full length of the tie.

The upper reinforcement comprises channel 15, the middle portion of which is cut away at the sides, and the end portions of which are cut away at 16 and 17 in order to provide for the securing devices for the

rails. At the central portion the sides are bent over the bottom as shown at 18, and in order to prevent the corrosion of this portion which is exposed to the air a casing 19 of lead or other similar material is provided, this casing projecting into the body portion of each section. The lead is easily applied, preferably in a molten state, and effectually serves the purpose without interfering with the flexibility of the connection.

The lower reinforcing members consist of cables, the strands of which are untwisted at given points, being spread at the ends in various directions, and held in a separated position at points intermediate of the ends by devices of porous material, preferably concrete, which will unite with and become part of the body portion of the tie. These cables are indicated by 20 and 21 and the spreading devices by 22. The cables are anchored therefore in a sense different from that understood by the mere employment of shear members. Non-corrosive joints are provided for these cables, and consist of tubular members 19' of lead or other material, or of lead applied in a molten state. In any event the reinforcement and joint are complete before they are embedded in the concrete of the body portion, as distinguished from the concrete of the devices 22, constituting anchors.

In Fig. 3 I have shown the channel as spread toward the central portion and ends. All portions of the channel may be provided with perforations, the edges of which are burred, for engagement with the concrete.

The reinforcement above specified provides rigidity where rigidity is required, and moreover provides flexibility approximating that of a wooden tie.

What I claim is:

1. In a cross tie, a body portion of concrete, and a reinforcing device therefor, said body portion being formed in sections and connected by the reinforcing device, and a casing for the reinforcing device, surrounding the latter at a point between the sections of the body portion and projecting into each of said sections, such casing being flexible.

2. A tie comprising a body portion formed in sections, a plurality of telescoping reinforcing members for connecting the sections, one of said members comprising a cable having its strands separated and a body of concrete between the separated strands thereof,

and a tubular flexible member of non-corrosive material surrounding said cable and having its respective ends embedded in adjacent ends of the tie sections.

- 5 3. A flexible joint for concrete reinforcement, comprising a member adapted to reinforce a plurality of bodies of concrete slightly separated from one another, and a
10 casing for the joint, formed of non-corrosive material, the ends of the casing being secured and the intermediate portion being capable of deflection in the direction of the longitudinal axis of the tie.

4. A flexible joint for concrete reinforcement, comprising a member adapted to reinforce a plurality of bodies of concrete slightly separated from one another, and a flexible casing for the joint, formed of non-corrosive material, the ends of the casing being embedded. 15 20

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM G. CHIPLEY.

Witnesses:

GEORGE H. MACDONALD,
H. C. JOHNSON.
