L. ESTELL.

PLASTIC TIE.

APPLICATION FILED JUNE 13, 1916.

1,218,537.

Patented Mar. 6, 1917.

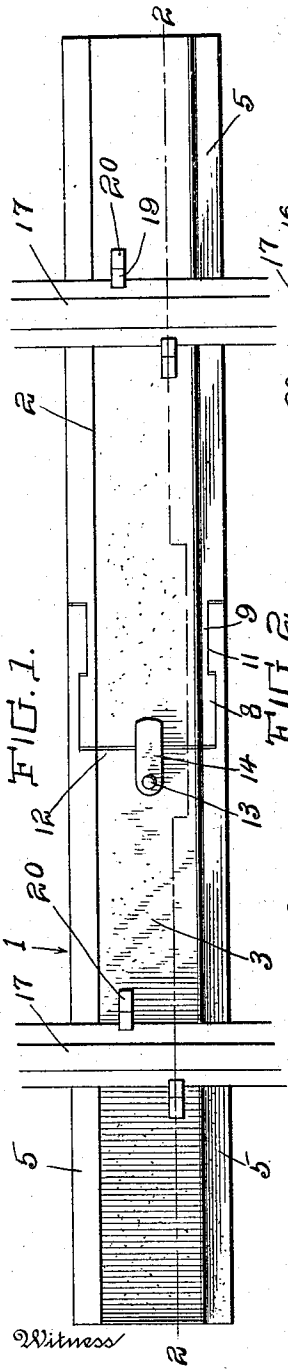


FIG. 1.

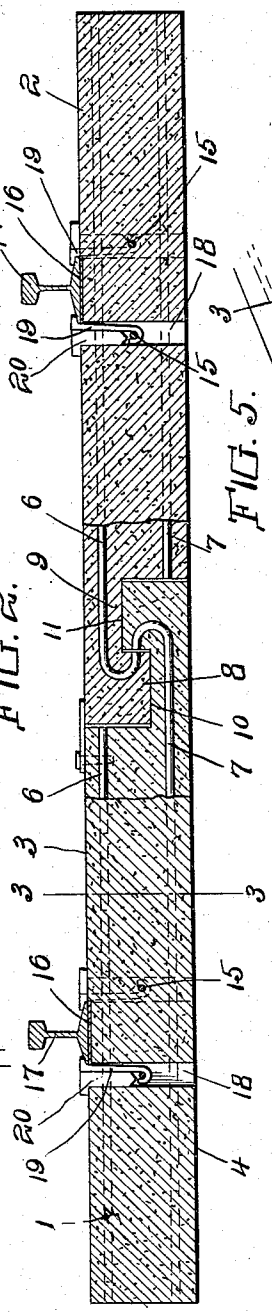


FIG. 2.

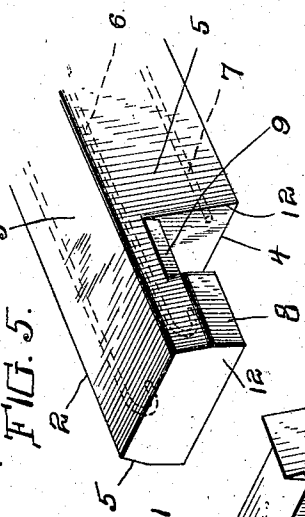


FIG. 5.

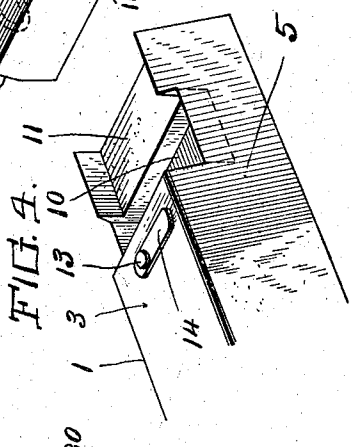


FIG. 4.

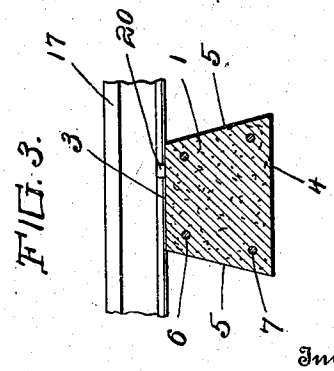


FIG. 3.

Witness

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PLASTIC TIE.

1,218,537. Specification of Letters Patent. Patented Mar. 6, 1917.

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To all whom it may concern:

Be it known that I, LEWIS ESTELL, a citizen of the United States, residing at Manasquan, in the county of Monmouth and State of New Jersey, have invented new and useful Improvements in Plastic Ties, of which the following is a specification.

This invention relates to an improvement in reinforced plastic ties for railway rails.

In carrying out my invention it is my purpose to construct a tie for railway rails comprising two sections which interlock with each other so as to effectively connect the sections but also whereby one of the sections will be permitted a limited vertical movement with respect to the other section so that either of the said sections may yield independently when subjected to the weight of the rolling stock passing thereover and also whereby the breaking or disintegration of the tie sections incident to the impact of force from such shock and jar will be minimized, if not entirely overcome.

It is also my purpose to produce a reinforced plastic tie having a substantially knuckle-joint connection and being provided with metallic contact plates at their said sections, whereby the plastic body of one of the sections will not rub against or contact with the plastic surfaces of the other section and so prevent the wearing of the sections at the meeting portions thereof, and to further provide resilient means, in the nature of a metal member, for normally holding the sections in alinement.

It is a still further object of the invention to produce a two-piece tie, the members of which having an interlocking engagement one with the other and to arrange upon each of the sections simple means for effectively securing the rails to the sections, said means also serving to reinforce the said sections.

With the above and other objects in view the improvement resides in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claims.

In the drawing:

Figure 1 is a top plan view of a tie constructed in accordance with the present invention and illustrating rails secured thereon,

Fig. 2 is a longitudinal sectional view approximately on the line 2—2 of Fig. 1,

Fig. 3 is a transverse sectional view approximately on the line 3—3 of Fig. 2,

Fig. 4 is a perspective view of the end of one of the tie sections, and

Fig. 5 is a similar view of the confronting end of the second section.

As disclosed by the drawing the plastic tie embodies two sections 1 and 2 respectively, each of which being molded to provide a horizontally flat upper surface 3, a flat lower surface or base 4 and inclined sides 5 connecting the upper surface or top 3 with the base or bottom 4. The base is, of course, of a greater width than the top 3, and embedded within each of the sections adjacent the corners thereof are longitudinally extending reinforcing members 6 and 7. These members are preferably in the nature of twisted rods and the lower members 7 of the section 1 have their ends rounded upwardly at the inner end of the said section, while the upper reinforcing members 6 of the section 2 have their ends rounded downwardly at the inner end of this section. One of the ends of the section 2 is formed to provide what may be termed a knuckle member, the same including a downwardly extending transverse head 8 and a reduced neck portion 9 connecting the head with the end of the tie proper. The head is of a less width than the tie section 2, at the lower portion thereof, and the neck is of a less width than the head. To receive the head and neck of the knuckle member of the tie I form the inner end of the section 1 with a laterally extending transverse pocket 10 and I channel the said tie from its end to the pocket as indicated by the numeral 11, the width and depth of the channel being of a size to receive the sides and lower face of the neck 9 and the width and depth of the pocket being of a size to receive the sides and lower face of the neck 9 and the width and depth of the pocket being also of a size to receive the depending head 8 of the said section 2. Between the vertical walls of the shoulders provided by the interengaging members at the connected ends of the sections, I arrange spac-

ing plates 12, constructed of metal, and designed to prevent the said walls or shoulders of the said sections contacting. Also, if desired, the horizontal walls or surfaces at the said interengaging ends of the tie sections, may have arranged therebetween, plates either of metal or compressible material to provide a cushion between these surfaces or to provide filler members for positively sustaining the upper faces of the sections flush.

The tie section 1, adjacent the inner vertical wall provided by the pocket 10 has pivotally secured thereto, as at 13, a flat spring plate 14 and this plate is of a size to be swung over the top of the tie section 2 when the sections are assembled and will hold the said sections in proper alinement. It is to be understood that the head and neck of the knuckle member at the end of the tie section 2 are comparatively loosely received within the channel and the pocket of the tie section 1; that is, while the sides of the neck and head contact with the side walls of the channel and pocket and either of the sections will be permitted a limited vertical movement independent of the other section, so that the shock and jar delivered to the sections by the impact of force of the rolling stock passing thereover will be yieldably received by the sections of the tie and so the danger of breakage or disintegration of the tie sections by such impact of force will be greatly reduced, if not entirely obviated.

In addition to the reinforcing members 6 and 7 I provide each of the sections 1 and 2 at a suitable distance from the outer ends of the sections, with transverse reinforcements in the nature of bolts 15, two of which being arranged in spaced relation to each other upon each of the sections 1 and 2 and these reinforcing members 15 are disposed to the opposite sides of plates 16 let in the top of the sections 1 and 2 and which provide rests for the rails 17. At the opposite sides of the plates 16, and disposed diagonally opposite each other are vertically arranged slots 18 and within each of these slots is disposed the shank of a hook member 19. The lower end of each of these hooks is provided with an eye through which is passed one of the reinforcing members 15 and wedge members 20 are forced within the slots 18 to contact with one of the sides of the hook members to force the same in the direction of the rails and to cause the ends of the said hook members to engage with the edges as well as the upper faces of the base flanges of the rails 17 and thus it will be noted that a simple but thoroughly effective manner is provided for securing the rails to the tie.

In addition to the advantages set forth in detail in the foregoing description, it will be apparent to those skilled in the art to which such inventions appertain that my improvement in ties not only embodies all of the desirable features of an ordinary wooden tie, but that the same can be cheaply constructed and as provision is made for the resiliency and yieldability thereof, the life of the tie should be of a greater duration than that of the ordinary wooden or metallic tie, while still again the laying of the ties will be greatly facilitated inasmuch as the weight of either of the sections will not be too great to permit of the handling of one of the said sections by a track hand of ordinary strength.

Having thus described the invention, what I claim is:

1. A plastic tie comprising two sections, one of said sections, at the meeting end from the top thereof being provided with a longitudinally extending knuckle including a laterally disposed head and a reduced neck connecting the head with the end of the section, the other section having its inner end from its upper face provided with a transverse pocket and having a channel communicating between the pocket and end of the section to receive the head and neck of the first mentioned section, metal reinforcements for the sections, and rail engaging hooks associated with the said reinforcements.

2. A plastic tie comprising two sections, one of said sections, at its inner end from its top face being formed with an outwardly extending substantially rectangular neck and with a laterally disposed head connecting the neck and projecting below the neck, the other section having adjacent its inner end and upon its upper face, a transverse pocket shaped to receive the head of the first mentioned section, and the said second mentioned section being further provided with a longitudinal channel to receive the neck of the first mentioned section, metal plates between the meeting ends of the sections, and metal reinforcements for the sections including transverse members.

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

LEWIS ESTELL.

Witnesses:
BENJ. B. PEARCE,
ARTHUR M. BIRDSALL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."