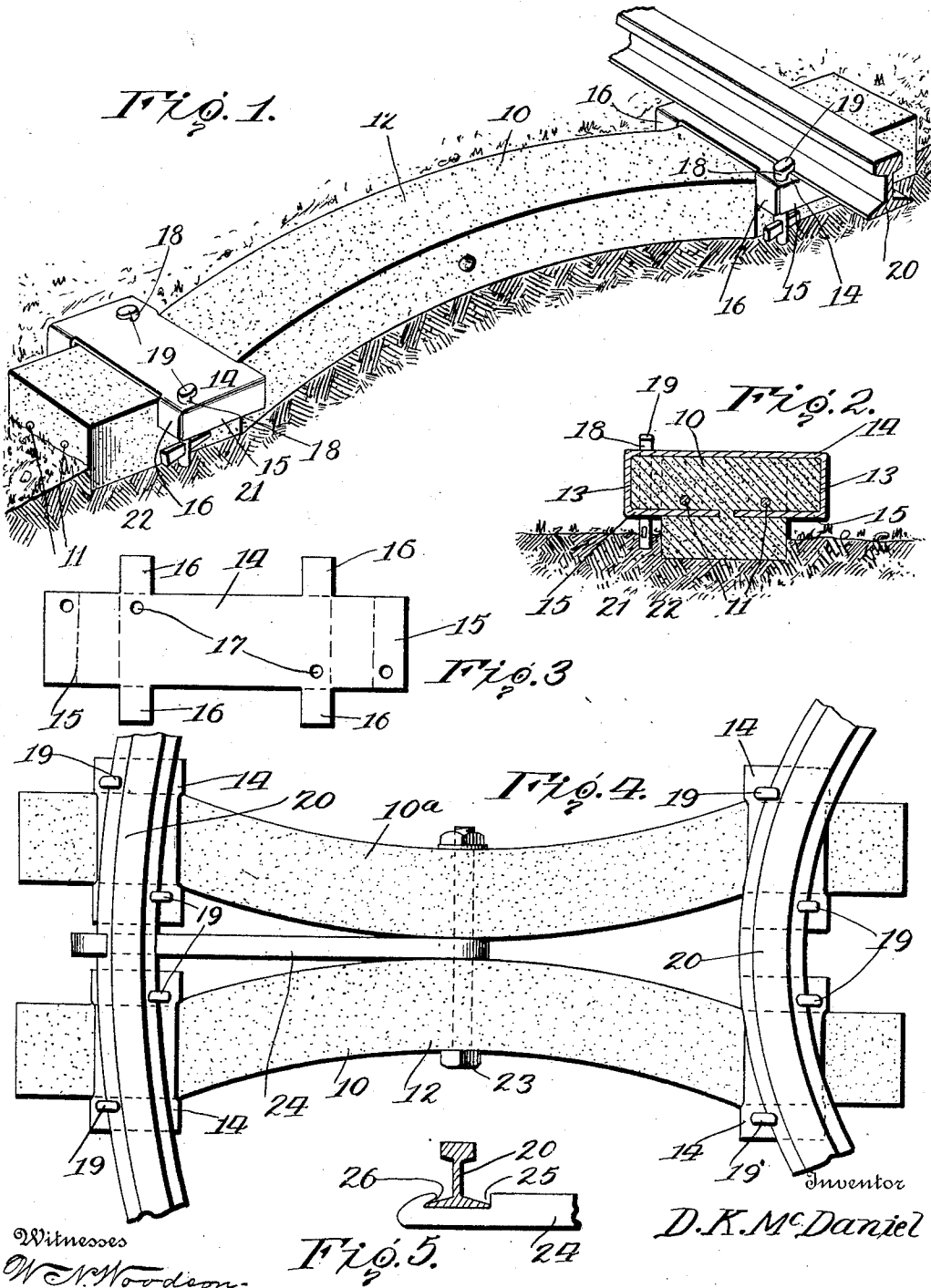


D. K. McDANIEL.
 PLASTIC TIE.
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1,006,492.

Patented Oct. 24, 1911.



Witnesses
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Fig. 5.

By

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PLASTIC TIE.

1,006,492.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DUNCAN K. McDANIEL, citizen of the United States, residing at Stewarts Point, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Plastic Ties, of which the following is a specification.

This invention relates to an improved railway tie, having particular reference to an improvement in plastic ties.

An object of this invention is to provide a tie of such construction that it will grip the roadbed and be held from longitudinal displacement to prevent the lateral movement of the track and the consequent spreading of the rails.

A salient feature of this invention is to provide a tie consisting of a body of cementitious material having reinforcements in the nature of binding wires and wear or supporting plates for the reception of the bases of the rails, the whole structure being arranged to present a very simple device adapted to accommodate a number of clamping pins projecting up from the wearing plates for engagement with rails to hold the same in position.

Another object of this invention is to provide a tie of this nature which is so constructed that it can be used with a companion or mating tie, the two ties being curved toward one another at their central portions, for use at curves, bridges, and the like where additional strength is required. When the companion ties are used it is designed to secure the same together by a cross bolt, and to hinge a brace upon the bolt between the ties for engagement with the base of the outer rail of the track to prevent the spreading of the rails.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of the improved tie; Fig. 2 is a transverse section taken through one end of the tie showing the wearing plate; Fig. 3 is a plan view of the wearing plate; Fig. 4 discloses a slight modification of the tie when used in conjunction with a mating tie; and, Fig. 5 is a detail side view of the brace, showing its connection with the rail.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing the reference numeral 10 designates the body of the tie which is formed of a body of cementitious material reinforced by tie rods 11 arranged longitudinally within the body. It will be noted, particularly from Fig. 1, that the tie is longitudinally curved, or provided midway of its ends with an offset portion 12 adapted to engage in the roadbed and offer considerable resistance when a lateral strain is placed upon the track to longitudinally displace the tie. At each end of the tie 10 laterally extending and registering wings 13 are formed, preferably integral with the body and being of a thickness equal to only one half of the thickness of the tie, the wings 13 forming extensions of the upper face of the tie. Supporting or wear plates 14 engage across the wings 13 and the upper face of the tie 10 at each end thereof, the supporting or wear plates 14 having intumed flanges 15 which are embedded in the body portion 10 beneath the wings 13. Flaps 16 depend from the opposite ends and at the longitudinal edges of the wear plates 14 for engagement with the opposite ends of the wings 13 to completely house the same and to serve as stops or reinforcing devices to prevent the movement of the supporting plates 14 from the ends of the tie. Openings 17 are formed in the diagonally opposite corners of the wear plates and extend down through the wings 13 and the flanges 15 to accommodate a pair of clamping pins 18 having offset heads 19 extending inward for engagement over the bases of the rails 20. The lower ends of the clamping pins 18, which engage through the flanges 15, are provided with vertical slots 21 for the reception of wedge shape keys 22 binding against the lower faces of the flanges beneath the wings 13. The keys 22 draw the pins 18 down through the supporting plates 14 and bind the rails 20 upon the tie.

From Fig. 4 it will be noted that the tie 10 can be employed in connection with the companion or mating tie 10^a. The tie 10^a is oppositely curved from the tie 10 so as to bring their intermediate or curved portions together and to separate their outer ends. In this instance the ties 10 and 10^a are bound

together at their intermediate portions by a cross bolt 23. Interposed between the ties 10 and 10^a is a brace 24 hinged at its inner end upon the bolt 23 and having a depression in its upper edge and at its outer end as at 25 for the reception of the base flange of the rail. It will be noted from Fig. 5 that the outer wall of the depression 25 is undercut, as at 26, such structure being adapted to provide a lip for engagement over the base flange to hold the rail from upward movement and to hold the hinged brace 24 up beneath the base of the rail.

Having thus described the invention, what is claimed is:

1. A plastic tie including an elongated body being laterally curved intermediate of its ends and having registering wings at its opposite sides and adjacent to its ends, tie rods positioned in the body for reinforcing the same, supporting plates engaging across the ends of the body and over the wings and having inturned flanges engaging beneath the wings and being embedded in the body, clamping pins engaging through the supporting plates and wings, and wedge shape keys carried in the lower ends of the clamping pins for adjustable engagement against the lower sides of the wings.

2. A plastic tie including an elongated body having a curved intermediate portion, wear plates engaging across the ends of the

tie, clamping pins carried through the wear plates for engagement with the bases of rails, and locking keys engaging through the lower ends of the clamping pins and against the under side of the tie.

3. A tie comprising an elongated body having lateral wings of reduced thickness flush with its upper face and registering in pairs adjacent to its ends, and a supporting plate engaging across the tie and the wings and having inturned flanges at their ends bent beneath the wings and further having flaps at their edges bent down against the edges of the wings.

4. A tie comprising an elongated body having lateral wings of reduced thickness registering in pairs at its opposite ends and being flush with its upper face, and a supporting plate engaging across the tie and the wings and having inturned flanges at their ends bent beneath the wings and being embedded in the body of the tie, the supporting plate further having flaps at its edges adjacent to their ends bent down against the edges of the wings.

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

DUNCAN K. McDANIEL. [L. s.]

Witnesses:

JAS. E. McKENNA,
THERESA McKENNA.