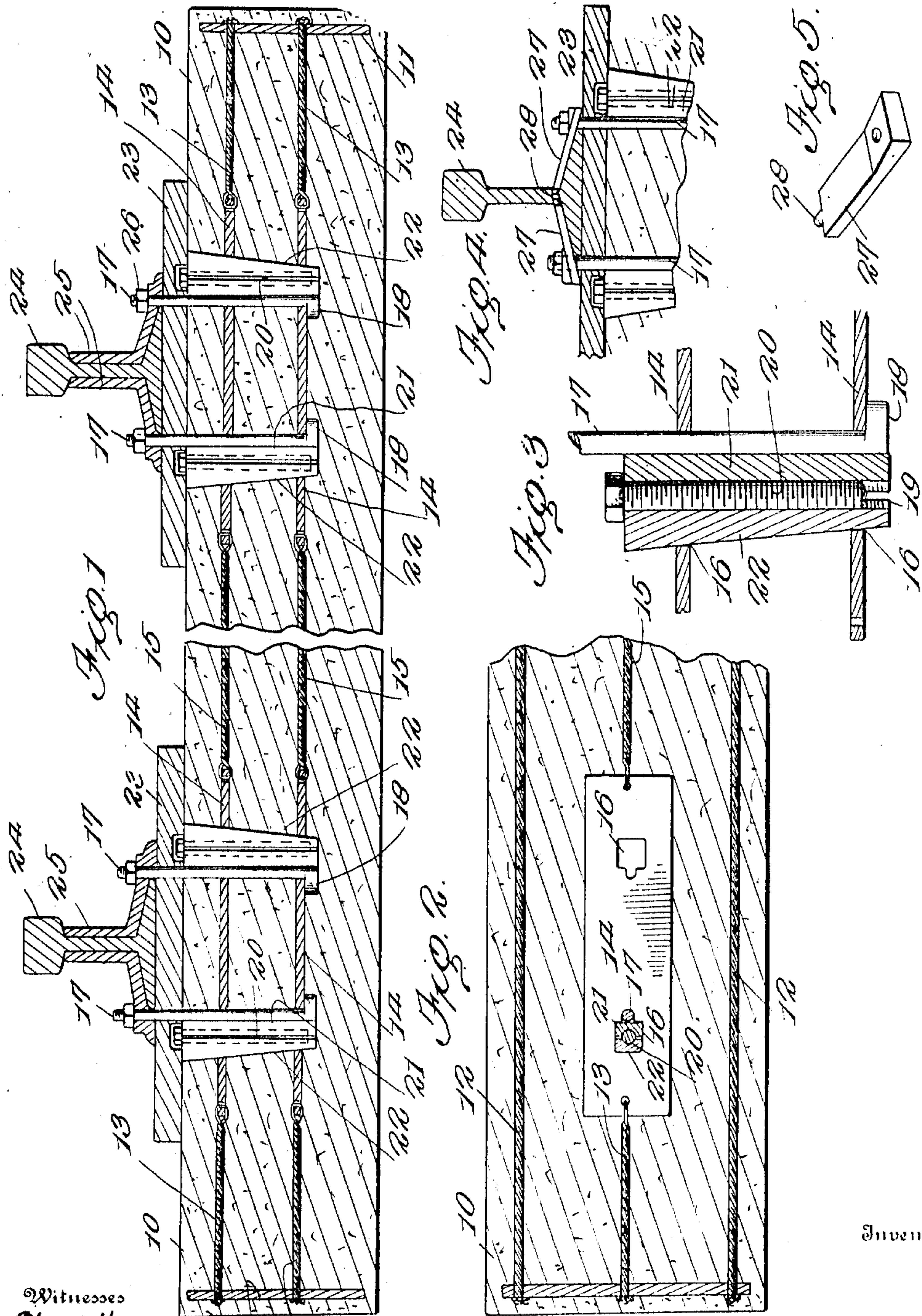


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RAIL-FASTENER.

964,218.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LYMAN S. CROTSEY, a citizen of the United States, residing at Petoskey, in the county of Emmet and State of Michigan, have invented certain new and useful Improvements in Rail-Fasteners, of which the following is a specification.

This invention relates to railway ties and refers particularly to an improved fastening means for securing the rails thereto.

An object of this invention is to provide an improved key which is inserted in a tie of concrete formation and which may be readily detached therefrom when it is desired to remove the rail fastening bolts from the tie.

The invention has for another object the provision of an improved means for preventing the creeping of the rails through the improved fastening means in order to rigidly retain the same to the tie and to thereby form a combined means for securing the rails in rigid relation to the tie.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a longitudinal section through the improved tie disclosing the fastening means as secured to rails supported thereon. Fig. 2 is a detailed longitudinal section through one end of the tie showing one of the keys and securing bolts positioned in the securing plate. Fig. 3 is a detailed section through one of the keys employed. Fig. 4 is a detailed sectional view of the improved securing means for preventing the creeping of the rails, and Fig. 5 is a detailed perspective view of one of the anti-creeper blocks employed.

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 numeral 10 designates a body of concrete which forms a tie and which is reinforced by the provision of the end plates 11 which support a plurality of longitudinally disposed wires or tie rods 12 at the opposite corners of the plates. Intermediately of the plates cables 13 are positioned which extend inwardly and are engaged at their inner extremities to the outer ends of the securing plates 14 which are positioned in vertical alignment within the body portion 10 of the tie. The

inner ends of the plates are supported by the provision of intermediate cables 15 which are stretched between the extremities of the same and serve to prevent the plates 14 from longitudinal displacement. The plates 14 are each provided with longitudinal slots 16 adjacent their opposite ends which are reduced at their inner ends for the reception of clamping bolts 17 which are passed vertically through the plates 14 and provided with enlarged heads 18 at their lower extremities for engagement against the under face of the lowermost of the plates 14 to prevent the forward movement of the clamping bolts 17 when the same are engaged in the reduced portions of the slots 16. The clamping bolts 17 are retained in the reduced portions of the slots 16 by the provision of split keys which are formed in two sections, each of which is provided with semi-circular grooves 19 longitudinally formed in the opposite faces of the same and adapted to register with each other. The grooves 19 are threaded for the reception of a threaded pin 20 which is positioned between the sections 21 and 22 of the split key for the purpose of splitting the same and of wedging the key through the plates 14 and against the clamping bolts 17. The beveled faces of the keys are formed upon the outer sections 22 so as to force the inner straight edge of the same against the bolts 17. The split keys are retained in position downwardly within the tie by the provision of rest plates 23 which are engaged transversely upon the outer face of the tie and upon which the rails 24 are positioned. The rest plates 23 are apertured for the reception of the clamping bolts 17 there-through and are provided with fish plates 25 which engage upon the opposite sides of the rails 24 and are clamped thereagainst by means of suitable nuts 26 carried upon the upper extremities of the clamping bolts 17.

The means employed for preventing the creeping of the rails 24 comprises anti-creeper blocks which are engaged upon the rest plates 23 and which are formed of portions of material which are elongated as at 27 and which are provided at their inner ends with studs 28 for engagement through apertures formed through the webs of the rails 24, the anti-creeper plates 27 being enlarged at their outer extremities through which the clamping bolts 17 are engaged in

order to secure the same rigidly against the rails 24. The provision of the studs 28 forms shoulders upon the inner ends which bind against the sides of the web of the rail and retain the studs 28 in position when a longitudinal strain is exerted upon the rail. In this construction it is preferable to alternate the anti-creeper blocks 27 with the fish plates 25 or to position the creeper blocks 23 at intervals of about six ties apart so as to form a substantial securing means for the rails 24.

When it is desired to remove the clamping bolts 17 the rest plates 23 are raised from the upper face of the body of concrete 10 and the threaded pins 20 are withdrawn from between the clamping sections 21 and 22 in order to admit of the collapsing of the same, when they may be readily removed and thereby free the clamping bolts 17. The bolts 17 are now moved laterally to disengage the heads 18 of the same from the securing plates 14, and are then withdrawn from the body 10.

Having thus described the invention what is claimed as new is:—

1. A rail fastener including a body of concrete, end plates embedded in the opposite extremities of said body, cables extended across the corners of said end plates straight through the body, securing plates positioned adjacent the ends of said body and in vertical alinement, said securing end plates being attached to said cables, said securing plates also having slots longitudinally formed adjacent the ends of the same, clamping bolts engaged through said securing plates and extended upwardly from the same, enlarged heads formed upon the lower extremities of said clamping bolts for engagement against the under face of said plates, key sections positioned through said plates against said bolts, threaded pins engaged between said sections for expanding the same, the outer of said sections being of wedge formation to bind each of said bolts in position, a rest plate engaged beneath the rail and over the upper ends of said pins, fish plates engaged

upon said rest plates and against the opposite sides of the rail and nuts engaged upon the upper ends of said bolts for retaining said fish plates in position.

2. A rail fastener including an elongated body of concrete, pairs of securing plates embedded in said body adjacent the ends thereof, clamping bolts engaged through said plates and extended upwardly from the same, enlarged heads formed upon said bolts for engagement against the under faces of the lower of said plates, key sections positioned through said plates against said bolts, threaded pins disposed between said sections for expanding the same, the outer of said sections being of wedge formation to retain said bolts in position, rest plates carried by said body and engaged over said key sections, said rest plates having recesses therein to receive the heads of said pins, and means carried by said bolts for retaining rails across said body.

3. In a rail fastener the combination with an elongated body of concrete, of end plates embedded in the ends of said body, securing plates arranged in said body adjacent the ends thereof, cables extended between said securing plates and between said end plates, bolts upwardly extended through said securing plates, split keys carried by said securing plates against said bolts, pins disposed through said keys and having the heads thereof terminated upon the upper face of said body, rest plates disposed over said pins and having recesses formed in the under faces thereof for the reception of the heads, said bolts extending upwardly beyond said rest plates, fish plates carried by said bolts for engagement with a rail and clamping nuts positioned upon said bolts for securing said fish plates in position.

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

LYMAN S. CROTHER. [L.S.]

Witnesses:

BERT H. COOK,
SUSIE McLEAN.