No. 820,611. PATENTED MAY 15, 1906.

H. F. URIE.

METALLIC RAILWAY TIE.

APPLICATION FILED JUNE 9, 1905.

Fig. 1.

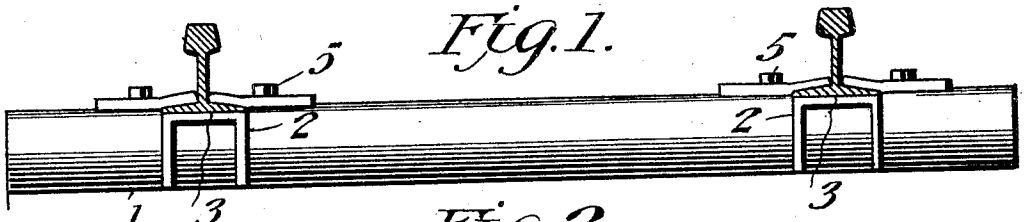

Fig. 2.

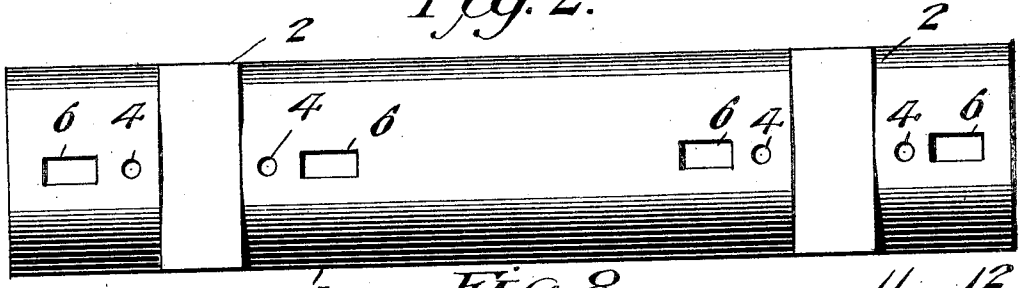

Fig. 8.

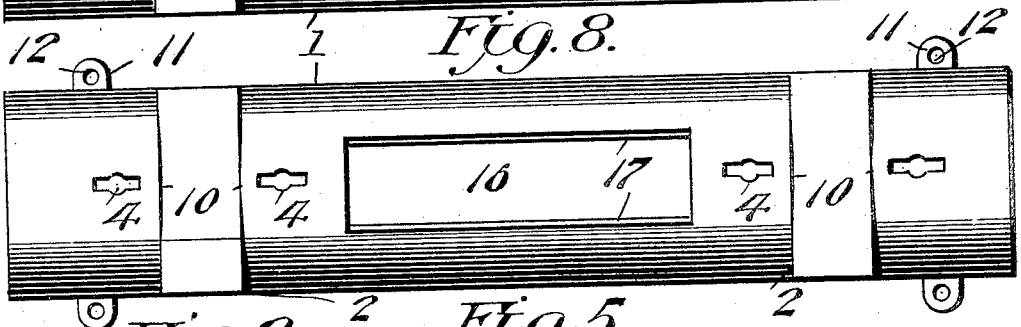

Fig. 3.

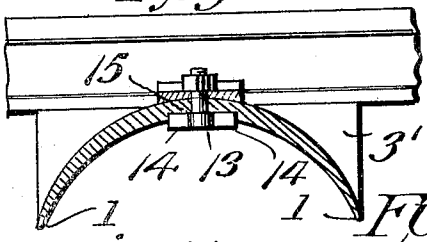

Fig. 5.

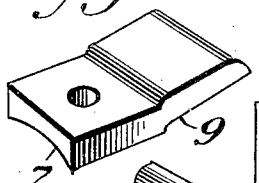

Fig. 9.

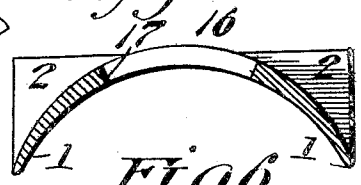

Fig. 4.

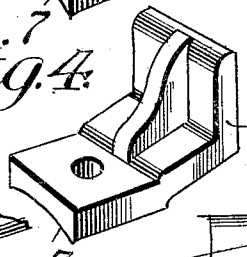

Fig. 6.

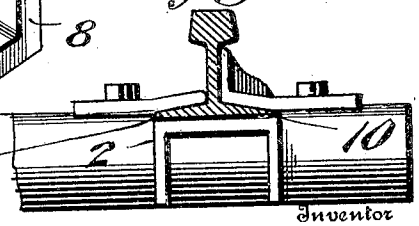

Fig. 7.

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UNITED STATES PATENT OFFICE.

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METALLIC RAILWAY-TIE.

No. 820,611. Specification of Letters Patent. Patented May 15, 1906.

Application filed June 9, 1905. Serial No. 264,460.

To all whom it may concern:

Be it known that I, HENRY F. URIE, a citizen of the United States of America, residing at Lake City, in the county of Columbia and State of Florida, have invented new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

This invention relates to metallic railway-ties, the object of the invention being to provide a simple, cheap, and reliable all-metal tie which is so proportioned as to form an efficient support for the rails and sustain the weight of trains without liability of shifting, the tie being to a certain extent self seating or tamping, thus reducing to the minimum the liability of washouts, the construction of the tie also adapting it to act as a watershed, and thereby prevent undermining of the same.

The tie hereinafter particularly described is practically indestructible, gives greater security to life and property, and effects a material saving in labor on the part of trackmen.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as herein fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a tie embodying the present invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged cross-section through the tie, showing a section of a rail supported thereon. Fig. 4 is a detail view of one of the clamps. Fig. 5 is a detail view of another form of clamp. Fig. 6 is a view of one end of the tie, showing a rail in cross-section and clamps of both kinds in engagement therewith. Fig. 7 is a perspective view of one end of the tie, showing a piece of rail mounted and secured thereon. Fig. 8 is a plan view of the tie slightly modified, and Fig. 9 is an enlarged cross-section through the same.

Like reference-numerals designate corresponding parts in all figures of the drawings.

The tie contemplated in this invention is of arcuate or segmental shape in cross-section, as best illustrated in Figs. 3 and 9, approximating one-third of a circle and being considerably thicker at its central or top portion than at its bottom or side edges, thus imparting the greatest strength and supporting power to the central portion of the tie, while adapting the edge portions 1 thereof to embed themselves in the ground or ballast.

The shape of the tie adapts the same to act as a watershed, thus preventing the undermining of the tie in use.

At points equidistant from the opposite ends of the tie and at a distance apart equal to the space between the rails the tie is countersunk or provided with flat depressions to form rail-seats 2, upon which the rails (shown at 3) directly rest. Shoulders 3′ extend laterally from the upper portions of the tie in opposite directions, as shown in Fig. 3, to form extensions of the seats 2 and to provide a support and bearing for the rails coextensive with the width of the bottom of the tie, as clearly illustrated in Fig. 3.

At opposite sides of the seats 2 there are holes 4 to receive the bolts 5, which secure the rail-clamps in place, and adjacent to the holes 4 the tie is provided with openings 6, through which the bolts may be passed in order to insert them through the holes 4 and corresponding holes in the clamps for the purpose of fastening the clamps in position.

The clamp used at the outside of the curves in the road-bed is shown in Fig. 4, the base portion 7 of each clamp being arched to conform to the shape of the tie in cross-section, each clamp also having an upwardly-extending brace 8, which bears against the web and beneath the head of the rail, as shown in Fig. 6. The clamp at the opposite side of the rail has a body portion of the same shape as the one just described, but simply projects inward, so as to engage over the base-flange of the rail, as shown at 9. The clamps firmly connect the rail to the tie, while the side edges of the base-flanges of the rail are braced by the shoulders 10, established by the formation of the depressed seat 2, the floor of which lies below the plane of the top surface of the tie. Where the tie is to be used upon bridges or trestle-work, it will be provided with laterally-projecting lugs 11, provided with holes 12 to receive spikes for fastening the ties to the underlying stringers or other supports.

The clamp-securing bolt 5 is provided with a flat head 13, comprising oppositely-extending wings 14, having rounded inner corners, as shown, and adapted to be received in correspondingly-shaped notches 15, formed in the under side of the tie, thus preventing the

turning of the bolt 5 when the usual nut thereon is turned up tightly. It has also been found desirable to provide an elongated tamping-slot 16, extending for about one-half of the length of the tie in the central portion thereof, the opposite walls 17 thereof forming shoulders against which the ballast is firmly tamped, the construction described affording additional means to prevent lateral shifting or play of the tie. In placing the tie in position and ballasting the same the ballast may be introduced through the slot 16 and thoroughly tamped in the usual manner.

The metallic railway-tie hereinabove described may be made of any suitable length and described on any desired arc in cross-section.

The weight and thickness of the tie may also be varied to suit conditions, and other changes may be made in the form, proportion and minor details of construction without departing from the principle or sacrificing any of the advantages of the invention.

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

1. A metallic railway-tie having a segmental form in cross-section, said tie being formed integral with flat seats to receive the rails, said seats being coextensive with the full width of the tie.

2. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats, rail-clamps located at opposite sides of each seat and openings beyond the clamps, substantially as and for the purpose set forth.

3. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats in its convex surface, and rail-clamps having body portions which conform in shape to the convex surface of the tie, substantially as described.

4. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats in its convex surface, bolt-holes at opposite sides of said seats, and notches adjacent to the bolt-holes, rail-clamps, and clamp-securing bolts having wings which engage said notches, substantially as described.

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

HENRY F. URIE.

Witnesses:
F. P. CONE,
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