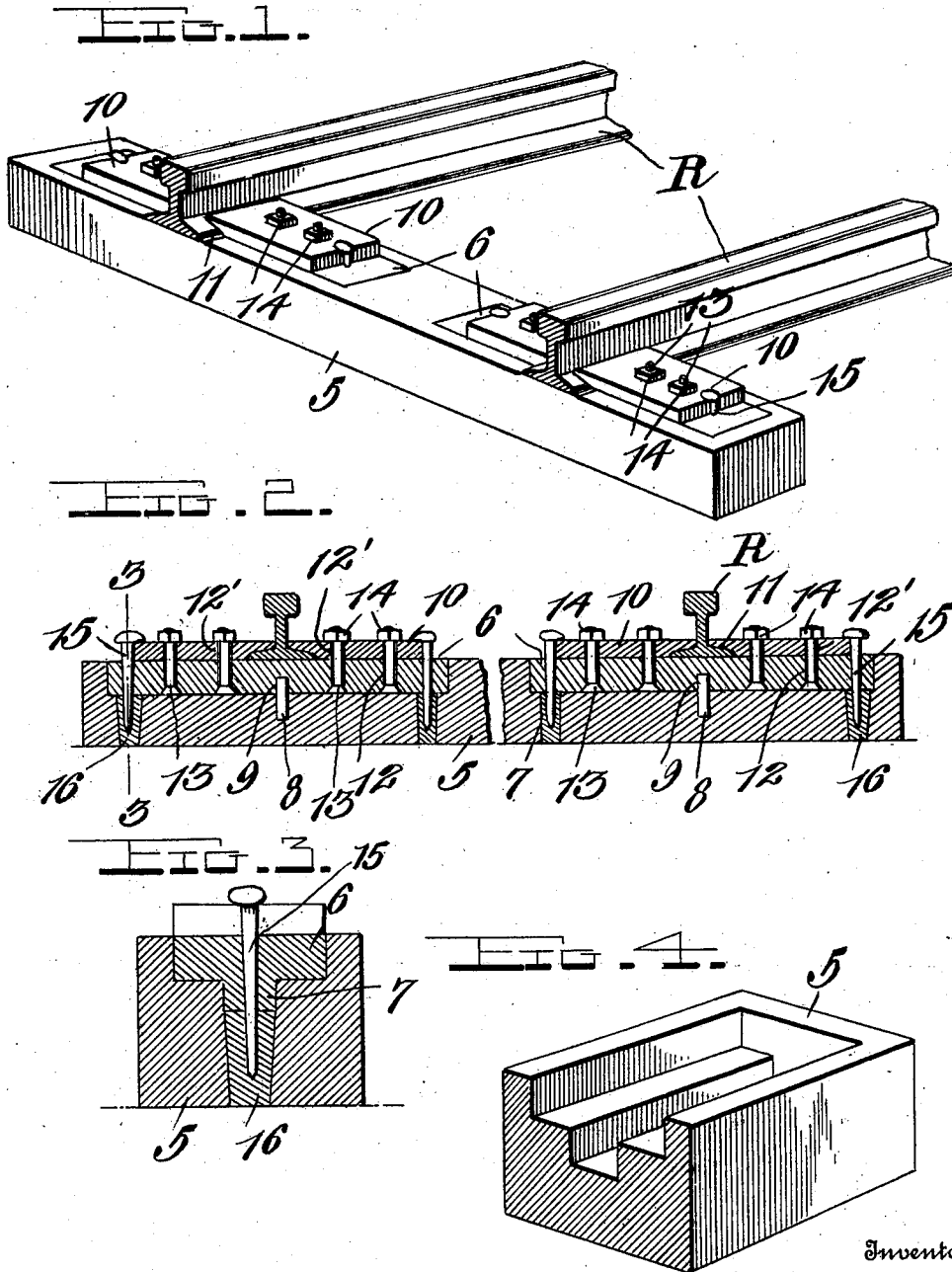


B. SHIRES.
RAIL TIE.

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RAIL-TIE.

991,380.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BALTUS SHIRES, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in Rail-Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in rail ties and has for its object to provide a tie of simple and novel construction which will effectually hold the rails rigidly in position upon the track bed.

Another object of my invention is to provide a rail tie which may be constructed at a very low cost, while at the same time the tie is extremely durable in use and efficient in practical operation.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a rail tie embodying my improvements; Fig. 2 is an enlarged longitudinal section of one of the ties showing the manner of securing the rail thereon; Fig. 3 is a section taken on the line 3—3 of Fig. 2; and Fig. 4 is a detail perspective view of the plastic base of the tie, the chair plate being removed.

Referring in detail to the drawing 5 designates the base of the tie which is of concrete or other suitable plastic material. In this plastic base, the chair plate 6 is embedded. It will be understood that one of these chair plates is provided for each rail and is arranged in each end of the plastic body of the tie, the intermediate portion of said tie being of solid formation to add to its stability. The chair plate 6 has formed upon its underside a longitudinal rib 7. A metal stud 8 is embedded in the plastic base of the tie and extends above the bottom thereof intermediate of its side walls. This lug is adapted to be received in an opening or socket 9 which is provided in the longitudinal rib of the chair plate. This lug 8 is located immediately beneath the rail when said rail is arranged in position as shown in Fig. 2.

The rail R is arranged upon the chair plate 6 intermediate of its ends, and suitable fastening plates 10 are adapted to be arranged upon the plate 6. One end of each of these plates is beveled as shown at 11 for

engagement upon the base flange of the rail upon either side of the web thereof. The chair plate 6 as well as the fastening plates 10 are provided with alined openings 12 and 12' respectively to receive the bolts 13. The lower headed ends of these bolts are preferably countersunk in the longitudinal rib 7 of the chair plate and upon the upper ends of said bolts suitable fastening nuts 14 are threaded to rigidly clamp the fastening plates in position. In addition to this fastening means for the plates 10, the plate 6 upon which the rail is arranged and its rib have an opening therethrough adjacent to each end to receive the spikes 15.

In the plastic base 5 of the tie, wooden plugs 16 are arranged, said plugs being firmly embedded in said base in the formation of the same. The spikes 15 after being inserted through the openings in the rail chair are driven into the wood plugs 16 until the heads of said spikes engage upon the upper surface of the fastening plates at the ends thereof. In this manner the rail is rigidly held in position upon the tie and all liability of its movement effectually eliminated. The rail supporting chair plates are firmly embedded in the plastic base of the tie so that the vertical movement of the rails is rendered impossible. As the fastening plates which hold the rails upon the ties are very securely fixed upon the chair plate, transverse movement of the rails is also eliminated.

From the foregoing it is thought that the construction and manner of assembling my improved rail tie will be readily understood. The base is formed in a suitable mold in the usual manner, and the chair plate arranged in said plastic base as shown in the drawings so that when the base solidifies, the chair will be firmly fixed in the same. A tie constructed in this manner is extremely durable in use and the rails may also be easily and quickly as well as securely fastened thereon. The tie can, moreover, be constructed at a very low cost and will at all times rigidly retain the rails in position on the road bed.

While I have shown and described the preferred construction and arrangement of the various parts, it will be understood that the invention is susceptible of considerable modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. In a rail tie, a plastic base, a rail chair embedded in said base having a longitudinal rib formed upon its under side, a stud fixed in the base and projecting above the bottom thereof, said rib having a socket therein to receive the stud, said chair plate having a plurality of bolt openings therein, fastening plates arranged upon said chair plate and engaging upon opposite sides of the base of a rail arranged thereon, bolts extending through the chair plate and through the fastening plates, and nuts threaded on the upper ends of the bolts.

2. In a rail tie, a plastic base, a chair plate embedded in said base having a longitudinal rib formed on its under side, a lug fixed in the bottom of said plastic base and extending above the same, said rib having a socket therein to receive the lug, said chair plate and rib having a plurality of bolt receiving

openings formed therein, fastening plates adapted to be arranged upon the top of the chair plate and to engage upon opposite sides of the base of a rail arranged thereon, said chair plate and its rib also having spike receiving openings therein, bolts disposed through said bolt openings and through the fastening plates to rigidly secure said plates upon the chair, and wooden plugs embedded in the bottom of said plastic base, the securing spikes being disposed through the spike openings in the chair to engage upon the ends of the fastening plates, said spikes being driven into the wooden plugs arranged in the base.

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

BALTUS SHIRES.

Witnesses:

GEO. W. POLAND,
WILL POLAND.

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