

No. 617,600.

Patented Jan. 10, 1899.

G. A. & T. F. PENROSE & W. R. WARE.

METALLIC RAILROAD TIE.

(Application filed June 29, 1898.)

(No Model.)

FIG. 1.

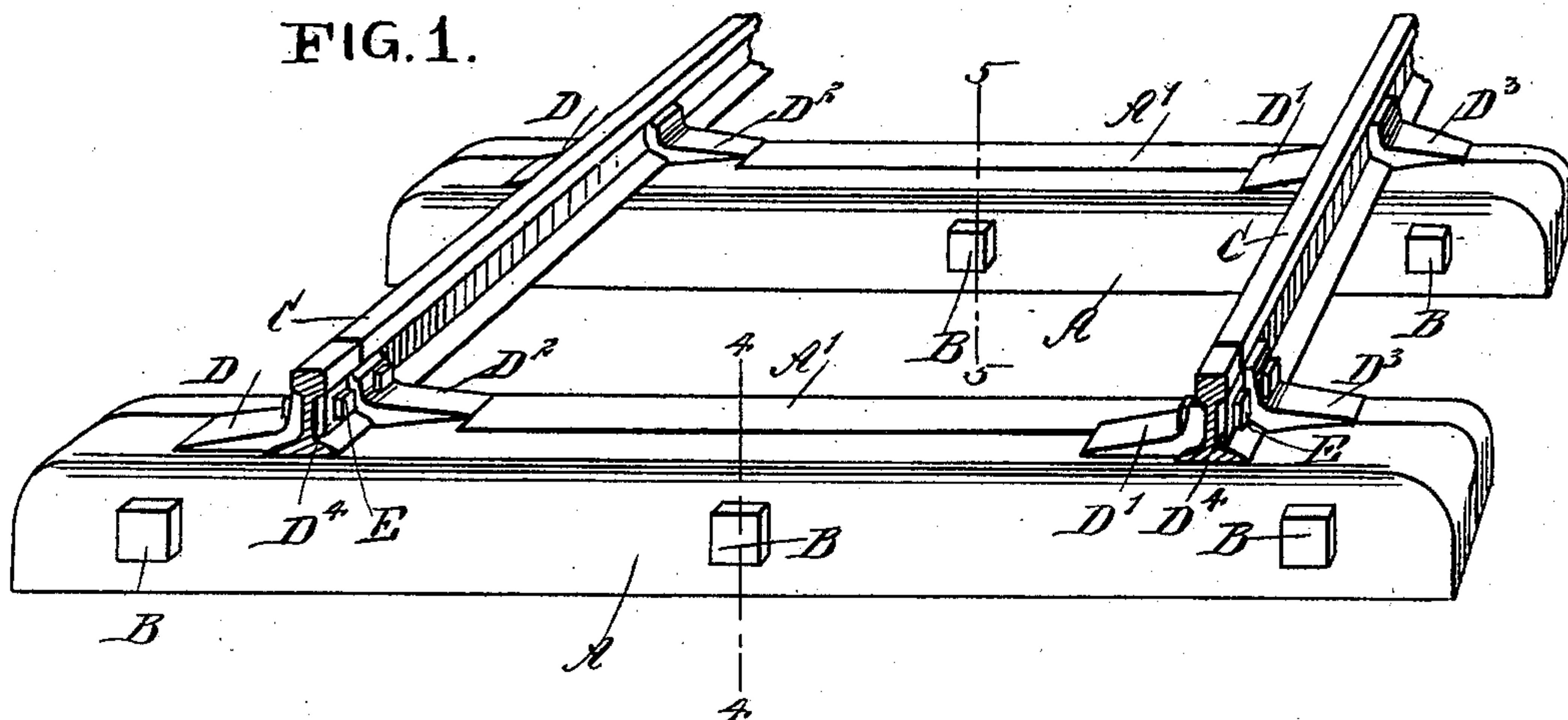


FIG. 2.

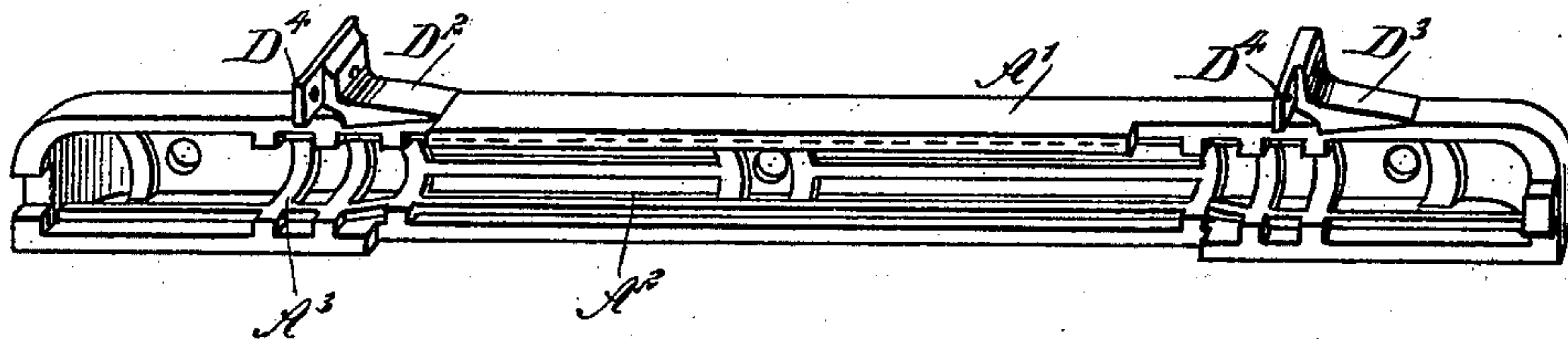


FIG. 3.

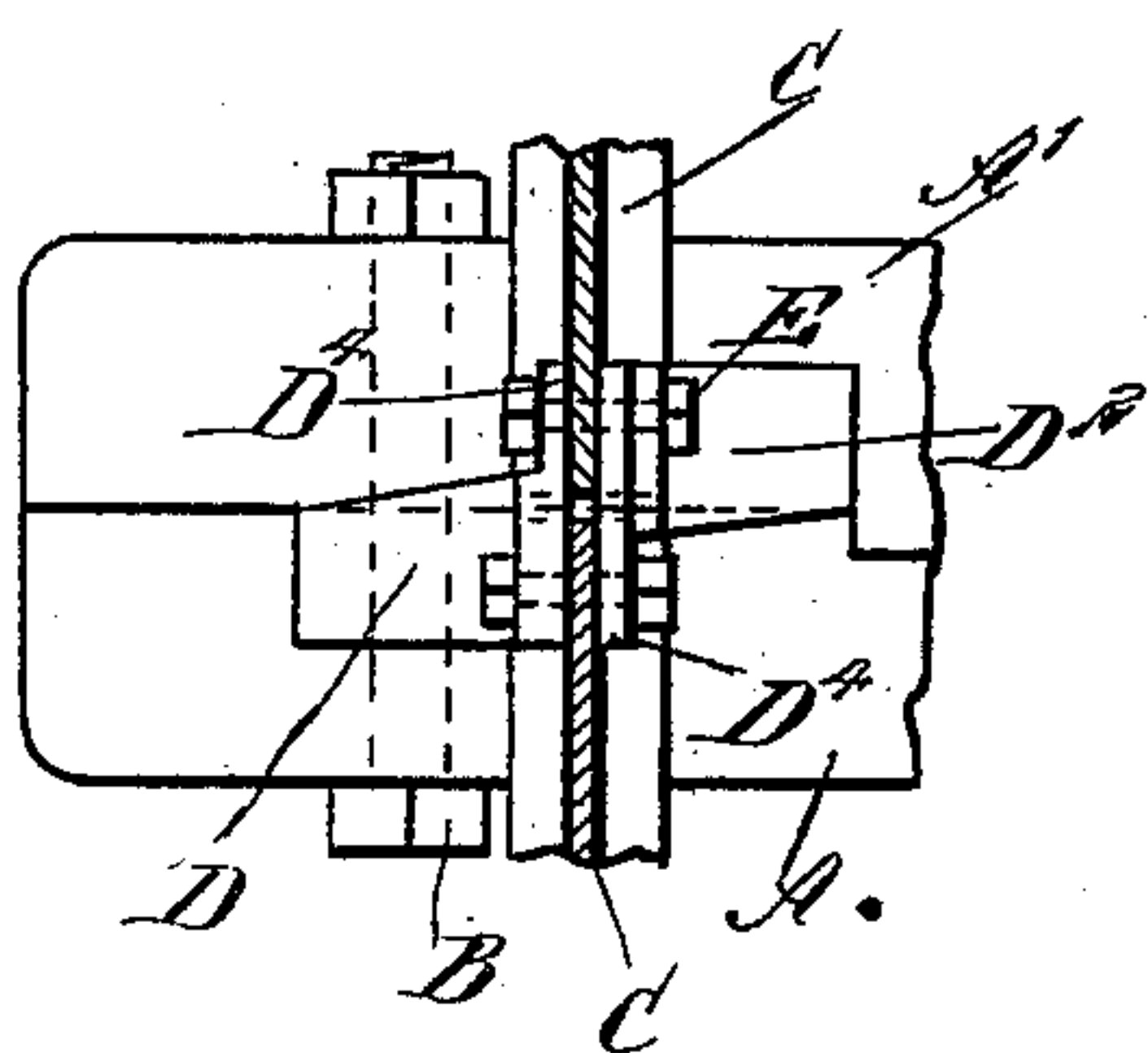


FIG. 4.

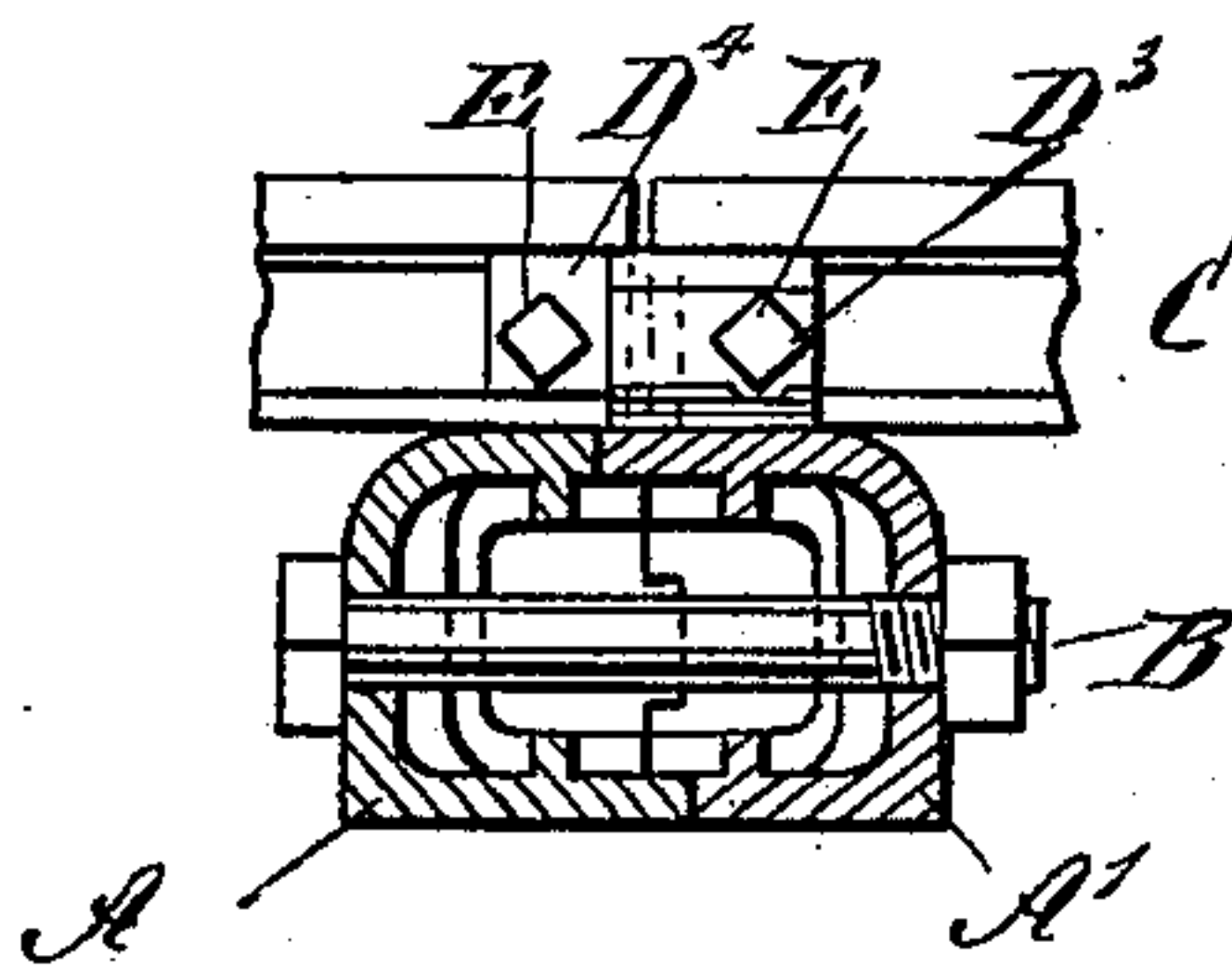
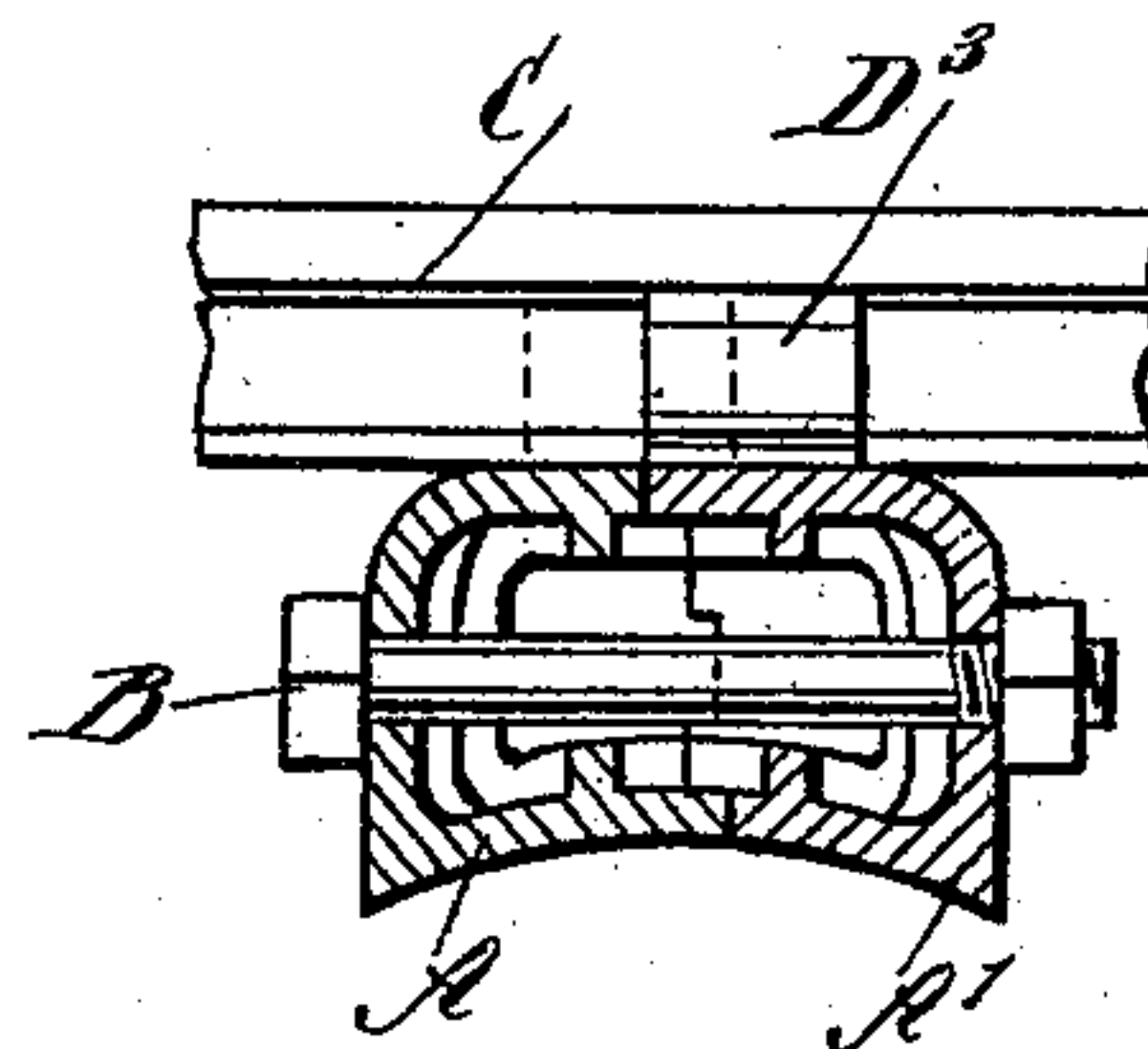


FIG. 5.



WITNESSES:

*Donn Twitchell*  
*Herb. Foster,*

INVENTORS  
*G. A. Penrose.*  
*T. F. Penrose.*  
*W. R. Ware.*  
BY *Munn & Co.*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORGE ALBERT PENROSE, THOMAS FLORISTON PENROSE, AND WILLIAM R. WARE, OF MEREDITH, ARKANSAS.

## METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 617,600, dated January 10, 1899.

Application filed June 29, 1898. Serial No. 684,733. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE ALBERT PENROSE, THOMAS FLORISTON PENROSE, and WILLIAM R. WARE, of Meredith, in the county of Woodruff and State of Arkansas, have invented a new and Improved Metallic Railroad-Tie, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved metallic railroad-tie which is simple and durable in construction, cheap to manufacture, and arranged to hold the rail securely in place without the use of spikes, and to fasten the ends of adjacent rails together without the use of fish-plates and like devices.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improvement as applied. Fig. 2 is a perspective view of one of the sections of the tie. Fig. 3 is a plan view of part of the improvement with the rails in section. Fig. 4 is a transverse section of the improvement on the line 4 4 of Fig. 1, and Fig. 5 is a similar view of the same on the line 5 5 of Fig. 1.

The improved railroad-tie is made in two longitudinal sections A A', fitted upon one another by suitable tongues and grooves, so as to render the sections interlocking, said sections being made hollow at their inner faces to render the tie as light as possible. The sections A A' are fastened together by transverse bolts B, as is plainly shown in the drawings, it being understood that longitudinal movement of the sections is prevented by the interlocking tongues and grooves. The bases of the rails C rest on the top surfaces of the sections A A', and said rails are secured in place on the sections by sets of lugs D D' on the section A and lugs D<sup>2</sup> D<sup>3</sup> on the section A'. The lugs D and D<sup>2</sup> are arranged in such a manner as to engage opposite sides of one rail, and the lugs D' and D<sup>3</sup> are similarly lo-

cated to engage opposite sides of the other rail.

As shown in the drawings, the lugs D<sup>2</sup> extend over the corresponding base portion of the rail and up along the web and a portion of the under side of the head of the rail to prevent lateral as well as longitudinal shifting of the rail when the two sections A and A' are interlocked and fastened together by the bolts B.

In making the railroad-track the sections A are first placed in position, the sections A' being disconnected therefrom and slightly drawn apart to permit of placing the rails C on the top surface of the sections between the corresponding sets of lugs D D<sup>2</sup> and D' D<sup>3</sup>. The sections A' are now shifted longitudinally to bring the sets of lugs in close contact with the opposite sides of the rails, and as the interlocking tongues and grooves are now in register with each other the two sections are moved transversely together, so as to interlock the same and to permit of inserting the bolts B through the now registering apertures in the sections A and A'.

The railroad-ties on which the ends of adjacent rails C rest have their lugs D D' and D<sup>2</sup> D<sup>3</sup> formed with extensions D<sup>4</sup>, and the lugs and extensions are apertured to permit of inserting bolts E through the said lugs and extensions and through apertures in the webs of the rail ends. Thus, as shown at the left in Fig. 1, the extension D<sup>4</sup> of the lug D<sup>2</sup> is brought opposite the lug D, and the bolt E passes through the said extension, the rail web, and the lug D, while the extension of the latter is opposite the lug D<sup>2</sup>, and the bolt E passes through the extension of the lug D and the lug D<sup>2</sup>. A similar arrangement is illustrated at the right in Fig. 1, in which the extension for the lug D<sup>3</sup> is opposite the lug D' and the bolt connects the three parts, while the extension of the lug D' is opposite the lug D<sup>3</sup> and the plate engages the said extension-lug and the web of the rail. Thus by the arrangement described the lugs D D' and D<sup>2</sup> D<sup>3</sup>, with the extensions, securely hold the rails in place, so that spikes or like fastening devices are not required, and where the ends of the adjacent rails engage the tie no fish-



plates are required for fastening the ends together, as the construction of the lugs, with the bolts and extensions, forms a fastening device for uniting the ends of the rails and  
5 at the same time holds the rails down in position on the tie.

The hollow sections are preferably provided on the inside with longitudinally-extending ribs  $A^2$  and transverse ribs  $A^3$ , preferably  
10 made to interlock at their ends to strengthen the sections and to assist in the interlocking, as previously explained.

The under side of the tie-sections  $A A'$  is preferably concaved, as shown in Fig. 5, to  
15 permit of securely holding the tie in place on dirt-ballast railroad-beds.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

20 1. A railroad-tie made in longitudinal sec-

tions each formed with a pair of lugs arranged in such a manner as to engage opposite sides of the rails, the lugs extending over the corresponding base, web and under side of the head of the rail, and each lug being  
25 provided with an extension, and bolts passing through the lugs, extensions and webs of the rails, substantially as shown and described.

2. A metallic railroad-tie made in longitudinal hollow sections adapted to be fastened  
30 together, and each formed with longitudinal and transverse internal strengthening-ribs, substantially as shown and described.

GEORGE ALBERT PENROSE.  
THOMAS FLORISTON PENROSE.  
WILLIAM R. WARE.

Witnesses:

WILLIAM L. FREEMAN,  
H. O. PENROSE.