

A. MORRISON.  
RAILWAY TIE.

APPLICATION FILED JULY 16, 1907.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

924,568.

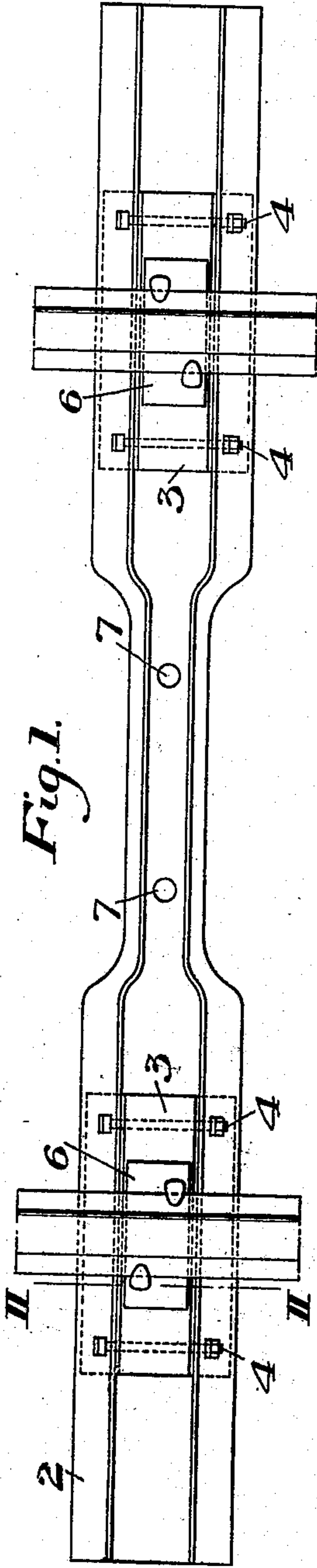


Fig. 1.

WITNESSES

W. W. Swartz  
R. A. Balderson

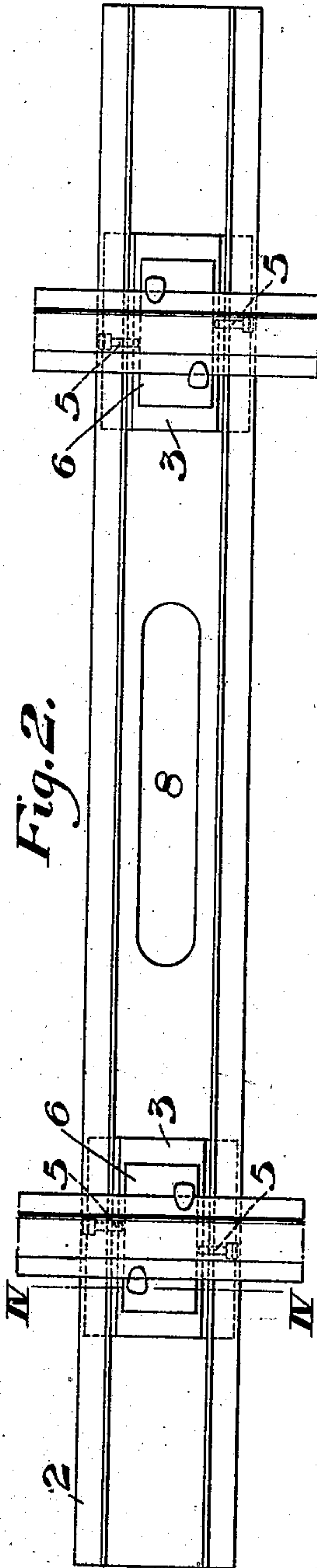


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 4.

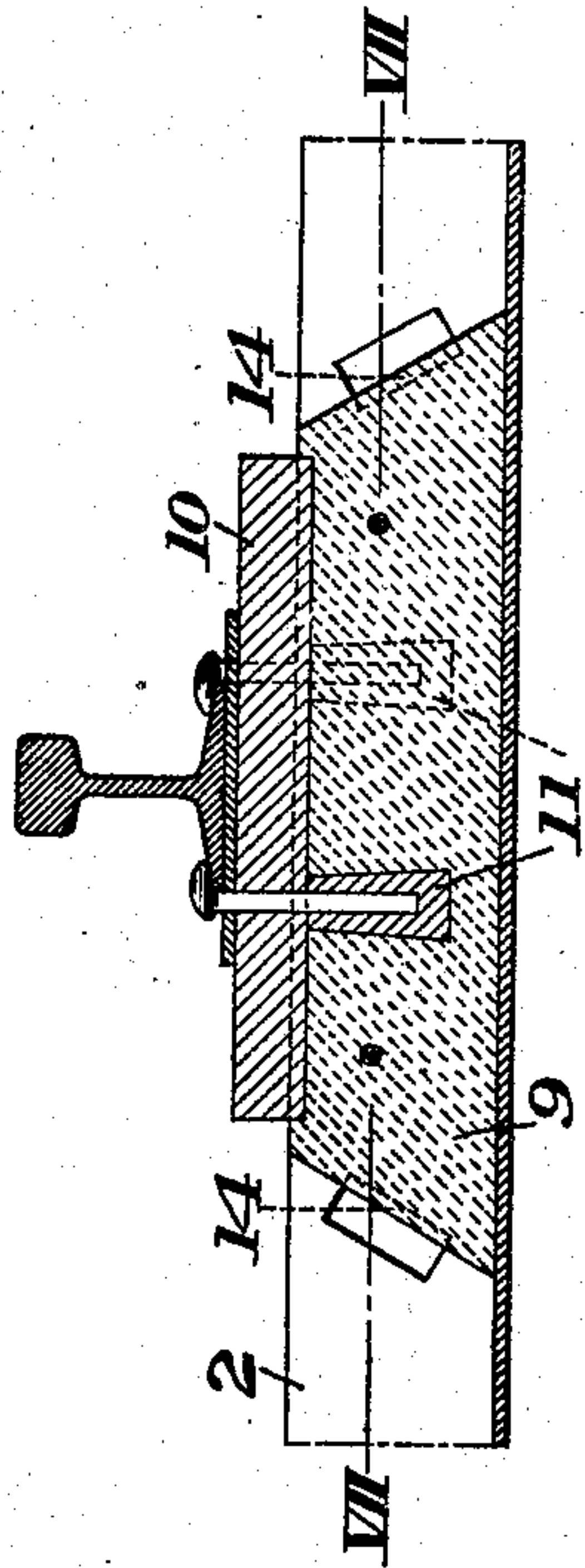


Fig. 6.

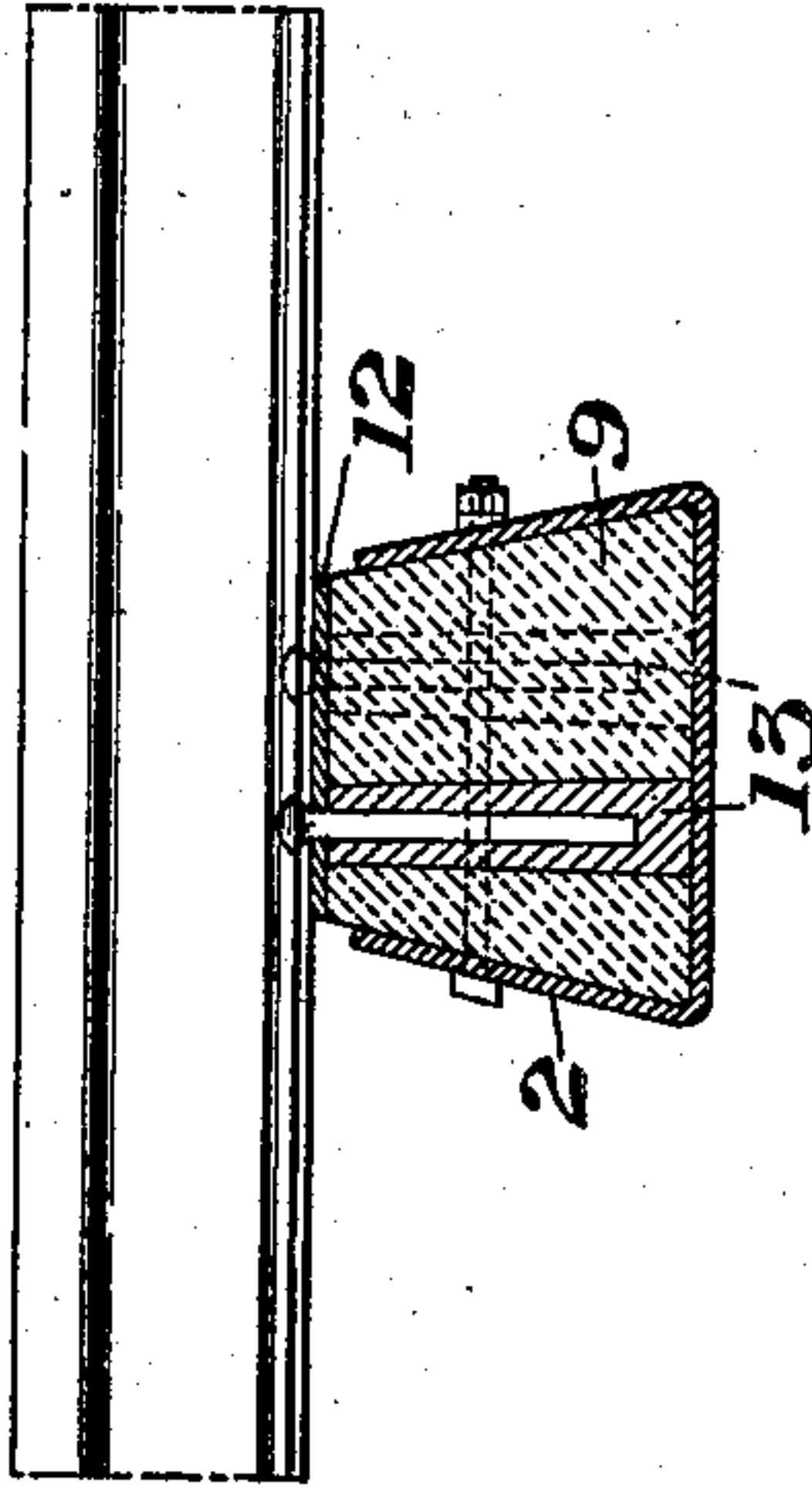


Fig. 3.

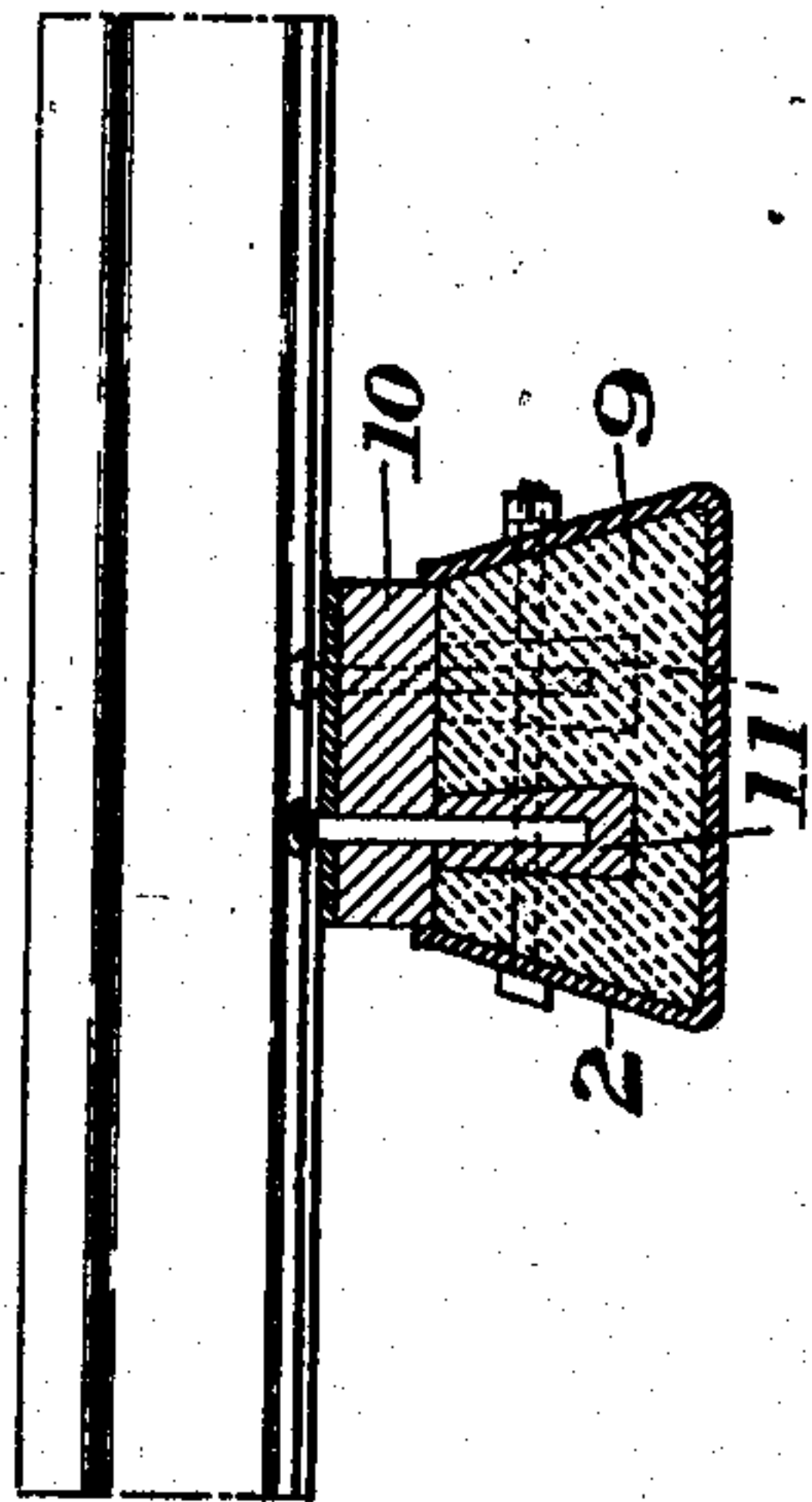
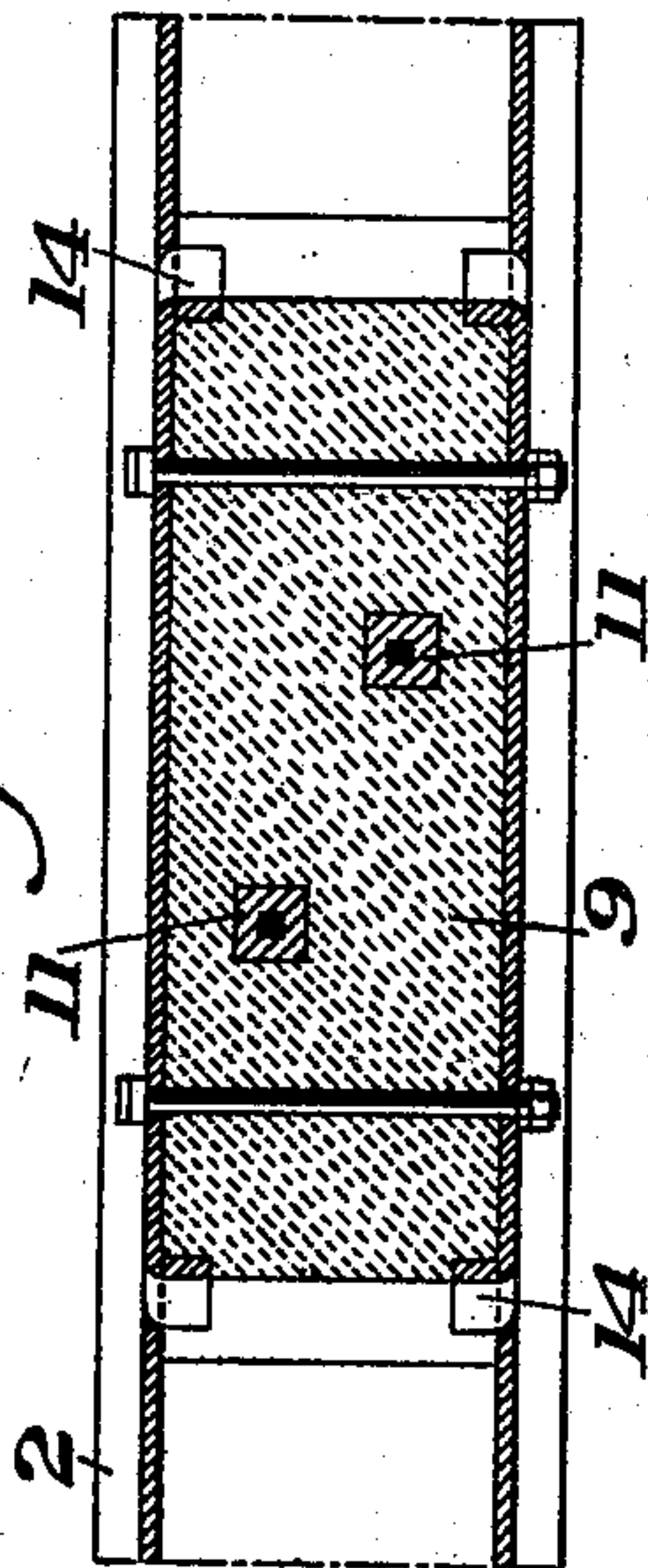


Fig. 5.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ANDREW MORRISON, OF PITTSBURG, PENNSYLVANIA.

## RAILWAY-TIE.

No. 924,568.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed July 16, 1907. Serial No. 384,047.

*To all whom it may concern:*

Be it known that I, ANDREW MORRISON, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Railway-Tie, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view showing one form of tie embodying my invention; Fig. 2 is a plan view showing a modified form of the tie; Figs. 3 and 4 are detail sectional views showing a second modification; Fig. 5 is a horizontal section on the line VII—VII of Fig. 4; and Fig. 6 is a sectional view showing another modification.

My invention has relation to railway ties, and is designed to provide a composite tie possessing substantially all the advantages of an all-metal tie, but which will have the added feature of resiliency and insulation, there being no metal contact between the tie and the rails.

A further object is to provide a tie of this character which can be constructed of very light metal, which is of such shape as to enable it to be readily tamped, to prevent its longitudinal movement, and which will be anti-rocking.

Referring to the accompanying drawings, the numeral 2 in Figs. 1 and 2, designates the metallic portion of the tie, which is of trough-shape with its lateral flanges preferably directed slightly inward toward their upper edges, and having preferably a flat base portion. This tie is shaped up from a rolled blank. The lateral edge portions of the blank before shaping are preferably cut away intermediate of the ends, so that the tie will be narrower at its central portion as shown in Fig. 1. The purpose of this is to give the central portion of the tie relatively less bearing area than its end portions, thereby largely overcoming the tendency of the tie to rock, and also to give an irregular surface and offer great resistance to movement in the direction of the axis of the tie.

For the purpose of supporting the rails, blocks 3 of asphalt, concrete, or other resilient or semi-resilient material, are set in the end portions of the tie, being secured by the through-bolts 4 or by any other suitable means, such as hereinafter described. These blocks project above the upper edges of the flanges of the tie so as to bring the rails en-

tirely out of contact with the tie. Tie plates 6 are preferably seated on these blocks to form the direct supporting surface for the rails. 7 designates drain openings, which are formed through the body of the tie.

In the modification shown in Fig. 2, the metallic body 2 is of the same width throughout, but the central portion of its base is cut away as indicated at 8, for the purpose of reducing the bearing area at this portion of the tie.

In the construction shown in Figs. 3, 4 and 5, the end portions of the tie are filled with a body 9 of concrete, asphalt, or other plastic material, and a wooden block 10 is partially embedded in the same, said block having depending dowel portions 11, which are embedded in the concrete or other substance. I provide a further means of holding the concrete base in place, by slitting the side walls of the tie to form tongues 14, and embedding these tongues in the concrete as best shown in Fig. 7.

The construction shown in Fig. 6 is similar to that shown in Figs. 5, 6 and 7, except that the wooden block is omitted, and a metallic tie plate 12 is seated directly upon the concrete, with preferably wooden blocks or pieces 13 embedded in the concrete for the purpose of receiving the spikes or similar fastenings.

The advantages of my invention result from the fact that by the construction described I am able to use comparatively light sheet metal, which can be readily shaped in the desired form, and which greatly reduces the cost of the tie. By seating and securing the rails upon blocks of non-metallic material extending above the tie, I avoid all metallic contact between the tie and the rails. This gives perfect insulation for the rails, and also provides a resilient support therefor. These non-metallic supporting portions or blocks are securely held against endwise movement by the through-bolts or other fastenings, and enable the rails to be readily adjusted thereon to any desired gage.

What I claim is:—

1. A railway tie, comprising a sheet-metal open top trough, separate bodies of hardened plastic material within the end portions thereof, and rail seating members on the said bodies projecting above the upper edges of the trough, together with means for confining the said bodies against endwise move-



ment in the trough, and means embedded in said bodies to receive rail-securing devices; substantially as described.

2. A railway tie comprising a sheet metal  
5 open top trough having upwardly and inwardly converging lateral walls, a separate rail-supporting body of hardened, plastic material within each end portion of the trough, blocks of non-metallic material seated  
10 on the said bodies and projecting above the upper edges of the trough, together with means for securing the said bodies against movement; substantially as described.

3. A railway tie comprising a sheet metal

open top trough, and separate bodies of hardened, plastic material within the end portions thereof, together with means for confining the said bodies against endwise movement in the trough, and means embedded in the said bodies to receive rail-securing devices; substantially as described. 15 20

In testimony whereof, I have hereunto set my hand.

ANDREW MORRISON.

Witnesses:

LAURENCE H. LEE,  
H. M. CORWIN.