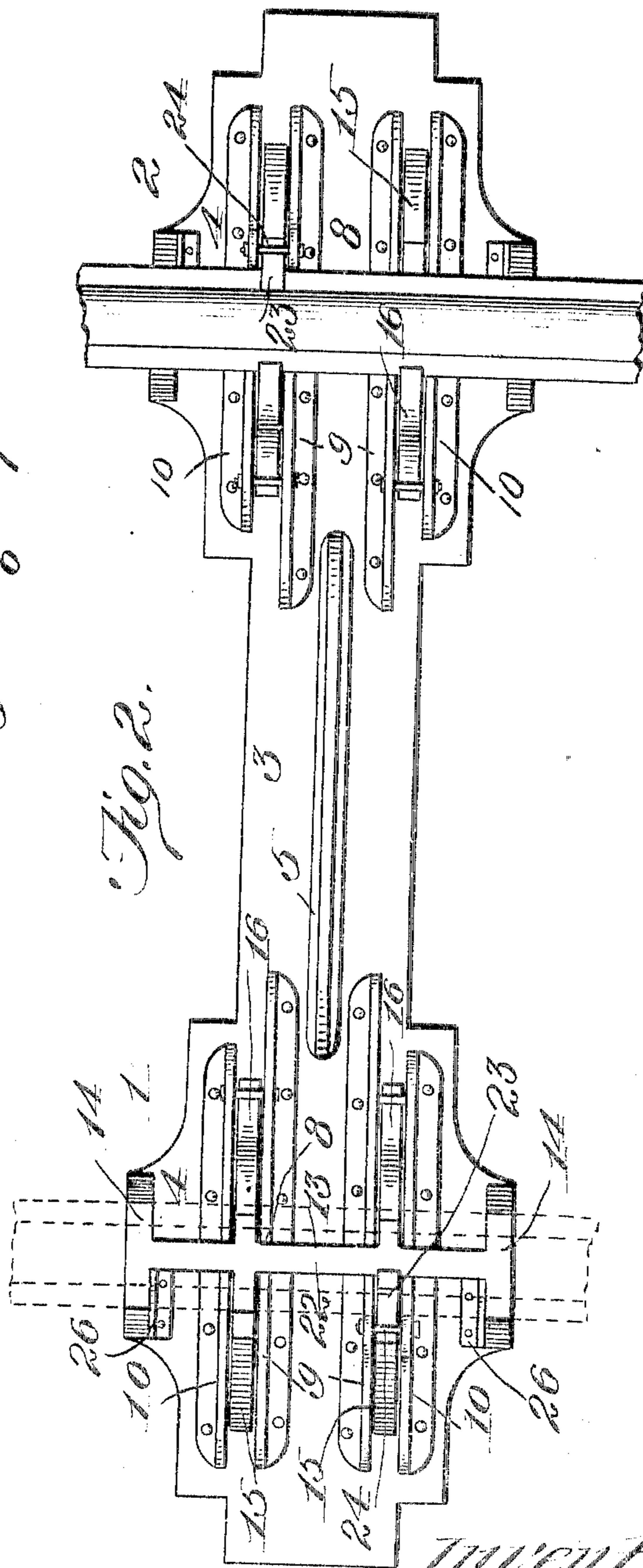
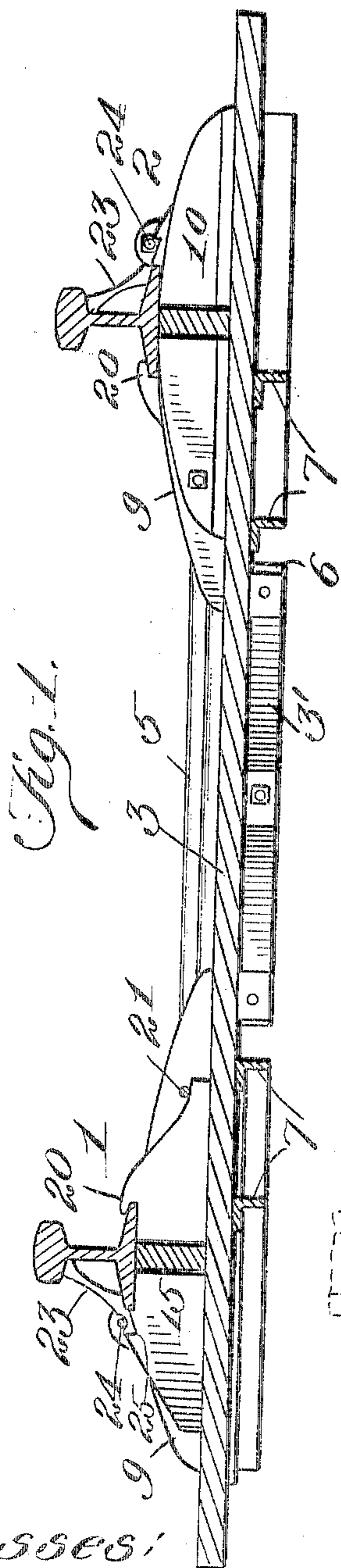


No. 794,048.

PATENTED JULY 4, 1905.

R. S. SCOTT.
METALLIC RAILROAD TIE.
APPLICATION FILED OCT. 27, 1904.

2 SHEETS—SHEET 1.



Witnesses:
C. D. Kester
James L. Morrie, Jr.

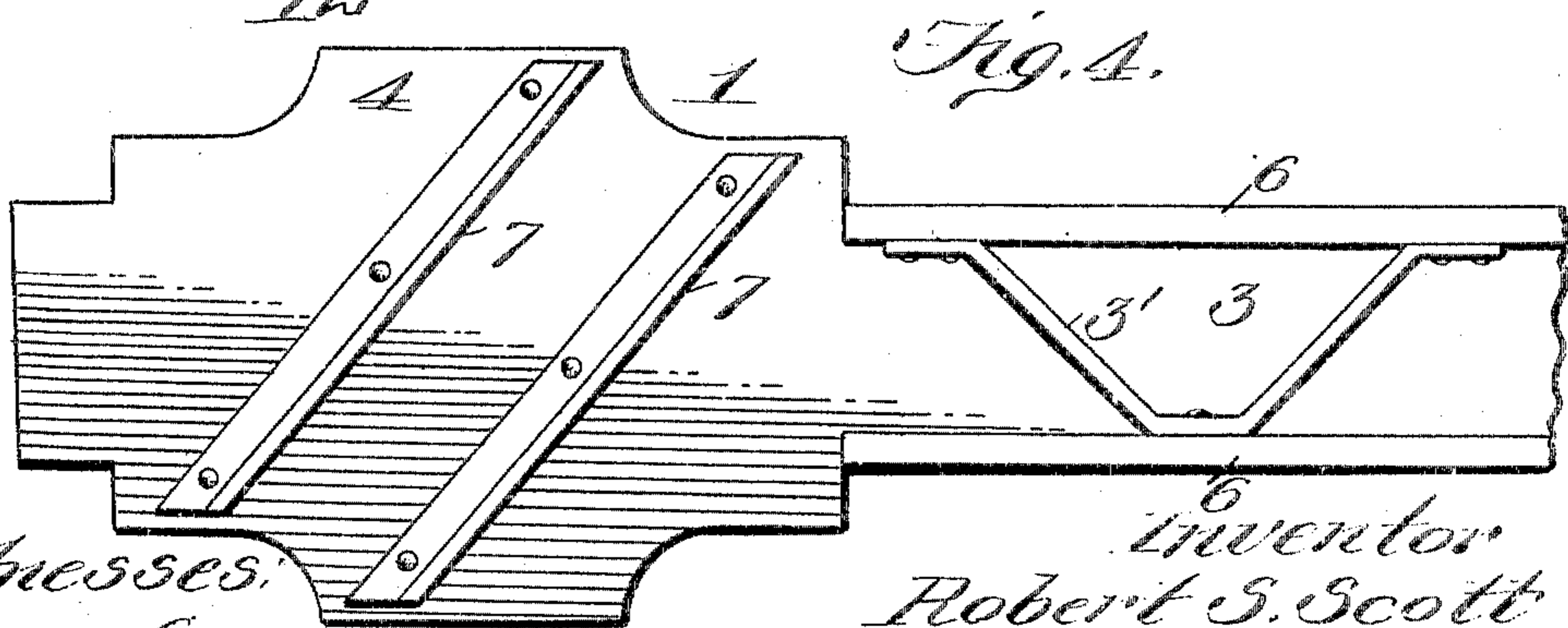
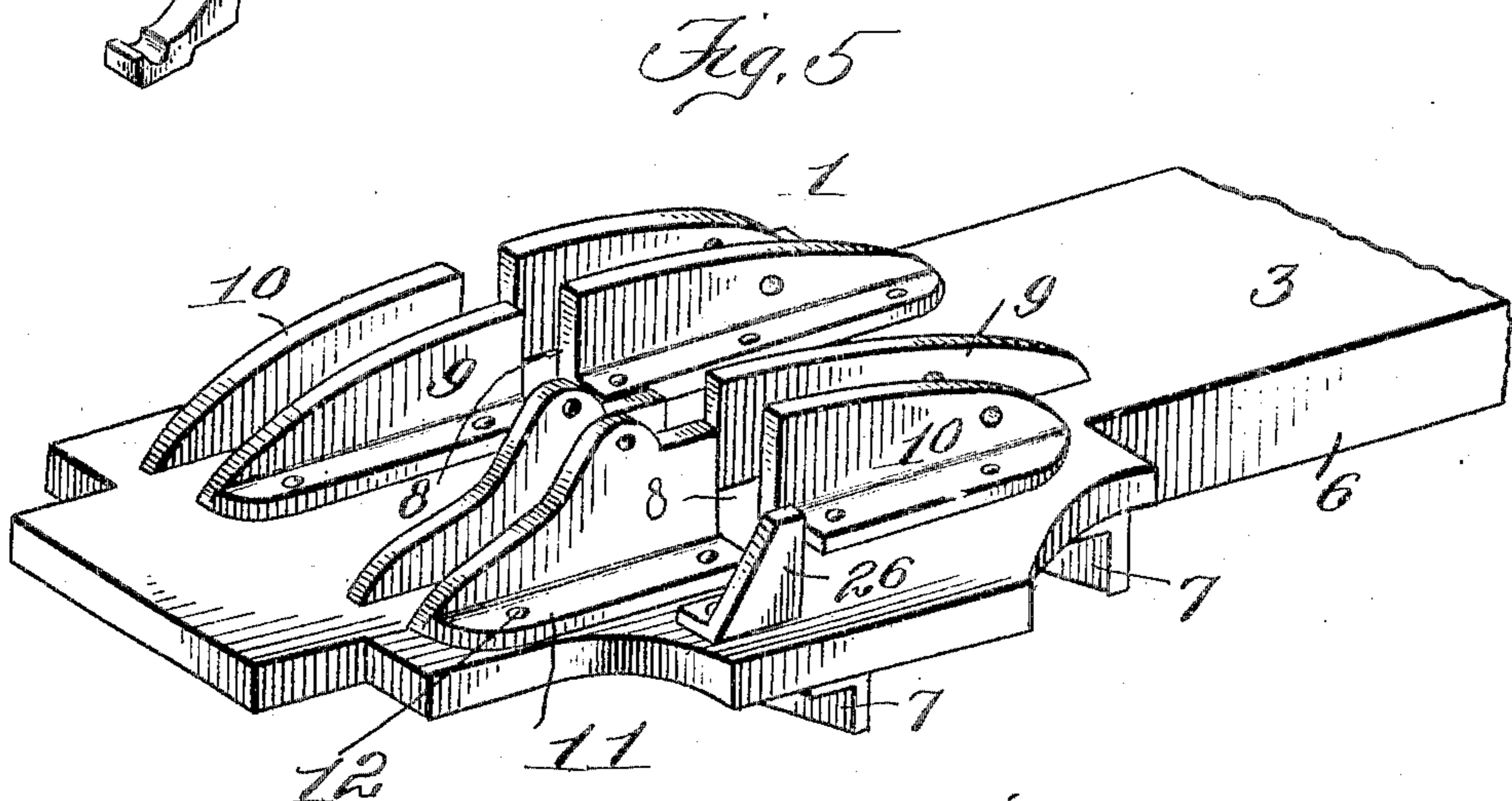
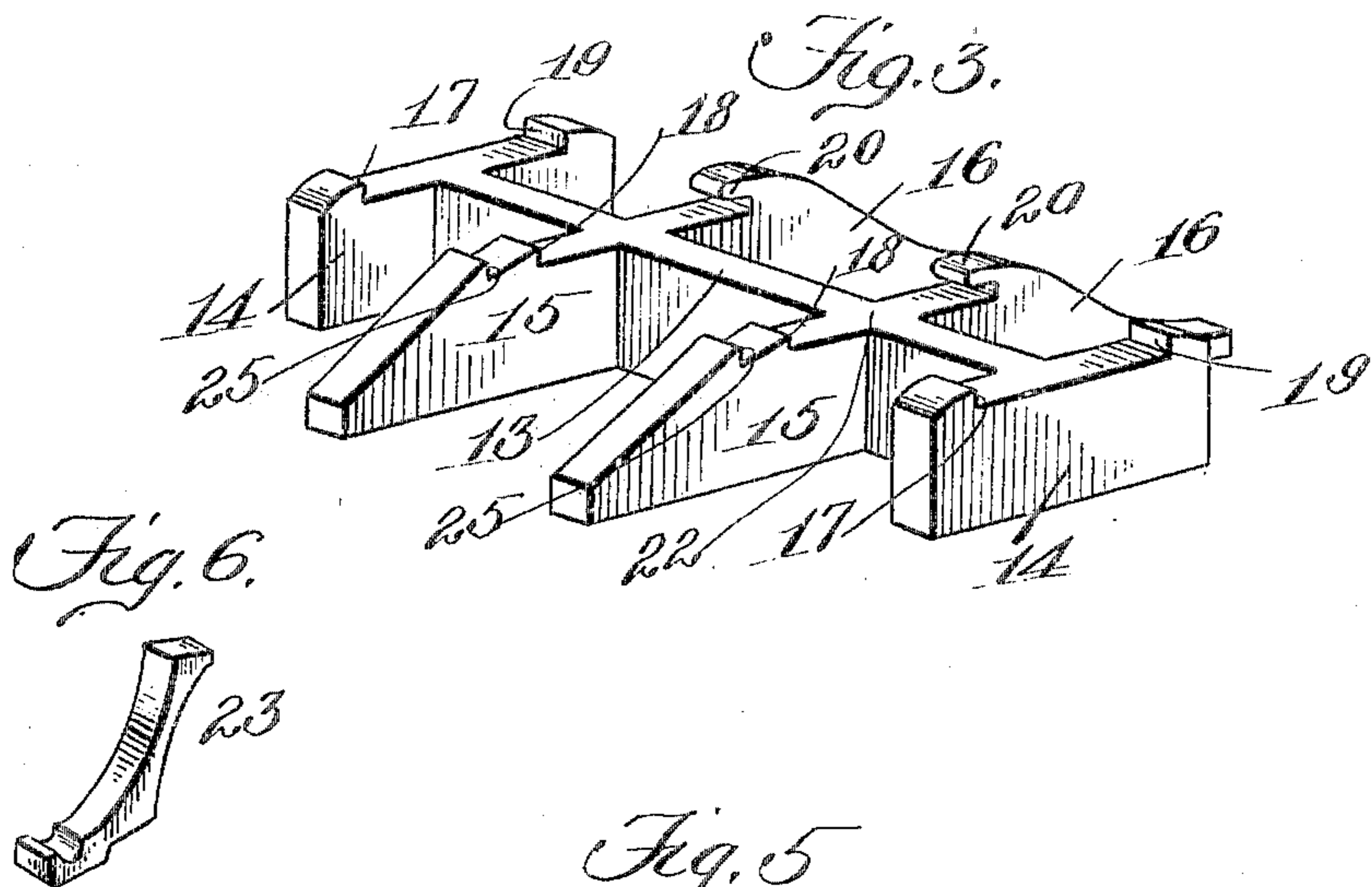
Inventor
Robert S. Scott
By James L. Morrie,
Att'y.

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2 SHEETS—SHEET 2.



Witnesses:

Chas. Kessler.

James L. Norris, Jr.

Inventor

Robert S. Scott

James L. Norris

W. H. H.

UNITED STATES PATENT OFFICE.

ROBERT S. SCOTT, OF WOODBURY, NEW JERSEY.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 794,048, dated July 4, 1905.

Application filed October 27, 1904. Serial No. 230,205.

To all whom it may concern:

Be it known that I, ROBERT S. SCOTT, a citizen of the United States, residing at Woodbury, in the county of Gloucester and State of New Jersey, have invented new and useful Improvements in Metallic Railroad-Ties, of which the following is a specification.

This invention relates to metallic railroad-ties; and the object thereof is to provide a rigid structure constituting a firm foundation, as well as a broad bearing-surface, for the track-rails, while at the same time employing a comparatively small amount of material, and, furthermore, to provide in connection therewith means for retaining the track-rails upon the tie so that the chances of the track-rails spreading will be reduced to a minimum.

The invention further aims to provide a metallic railway-tie with means to prevent the same when placed in position from moving in the direction of the track-bed, and also with means to prevent the tie from moving transversely of the track-bed, said means also acting as a reinforcement or stiffener for the body of the tie.

The invention further aims to construct a metallic railway-tie which shall be simple in its construction, strong, durable, efficient in its use, preventing the track-rails from spreading, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of a novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a longitudinal sectional view of a metallic railway-tie constructed in accordance with this invention. Fig. 2 is a top plan view thereof. Fig. 3 is a perspective view of the combined track-rail bearing and

retaining bracket. Fig. 4 is an inverted plan view of one end of the tie. Fig. 5 is a perspective view of one end of the tie with the combined track-rail bearing and retaining bracket removed, and Fig. 6 is a detail.

Referring to the drawings by reference characters, the body of the tie is formed from a piece of flat metallic material substantially of a length equal to the ties now in general use and divided into a pair of end portions 1 2, connected together by an intermediate portion 3. The end portions 1 2 at their center and at a point removed from each end thereof are of greater width than the intermediate portion 3, while the remainder of the said end portions 1 2 is of the same width as said intermediate portion 3. The enlarged parts of the end portions 1 2 are indicated by the reference character 4.

The foregoing is the preferred manner of constructing the tie, but it is evident that the body of the tie may be of the same width throughout, but constructing the body in the manner as shown obtains saving in material.

Upon the upper face of the intermediate portion 3, approximately centrally thereof, extending the entire length thereof, and projecting over upon the end portions 1 2, is a longitudinally-extending reinforcing-brace 5. Said brace 5 is suitably secured to the body of the tie, but, if desired, may be an integral part thereof. The intermediate portion 3 is provided throughout at its sides with longitudinally-extending depending flanges 6, which are adapted to reinforce as well as stiffen said intermediate portion 3 and also to engage in the track-bed to prevent the tie moving in the direction of the length of the track-bed. To prevent the tie from moving transversely of the track-bed and also to reinforce and stiffen the end portions 1 2, the lower face of said end portions 1 2 has suitably secured thereto or formed integral therewith a series of obliquely-extending depending cleats 7, which engage with the road-bed and prevent displacement of the tie when the latter is in position. The lower face of the intermediate portion 3 is also provided with a rib 3' for the same purpose as the cleats 7.

Upon the upper face of each of the end portions 1 2 is secured a plurality of inner and outer pairs of shoes, as shown two; but it is evident the number of shoes can be increased or diminished, as desired. The shoes that constitute each pair of shoes extend longitudinally of the end portions 1 2 and are separated by an intervening space, (indicated by the reference character 8.) Each of the shoes consists of a pair of brackets 9 10, having at their lower ends the flanges 11, through which extend the holdfast devices 12 for securing the brackets in position. The brackets 9 of the inner pairs of shoes are of greater length than the brackets 10 and extend upon the intermediate portion 3. The brackets when in position are arranged a suitable distance apart, so as to form a pocket. The shoes are adapted to receive the combined bearing and retaining brackets for the track-rails, there being one combined bearing and retaining bracket mounted upon an end portion of the body of the tie.

Each of the combined bearing and retaining brackets for the track-rails consists of a transversely-extending bar 13, standing on edge and which terminates at each end in a member 14 extending in a longitudinal direction with respect to the body of the tie. The bar 13 has projecting outwardly therefrom a pair of supporting-arms 15, which extend in a longitudinal direction with respect to the body of the tie, and the bar 13 has projecting inwardly from one side thereof a pair of supporting-arms 16, which extend in a longitudinal direction with respect to the body of the tie. The arms 15 are adapted to enter a shoe of each pair of shoes, and the arms 16 are adapted to enter the other shoe of each pair of shoes. The top edge of the members 14 at one side thereof is provided with shoulders 17, and the top edge of the arms 15 is provided with shoulders 18, the shoulders 17 and 18 being in transverse alinement. The other side of the top edge of the members 14 is provided with shoulders 19, and the top edge of the arms 16 is also provided with retaining-lips 20. The shoulders 19 and lips 20 are arranged in transverse alinement. The members 14 are supported upon the enlarged part 4 of the end portions 1 2. The transversely-extending bar 13, when the combined bearing and retaining bracket is in position, is adapted to extend across the intervening space 8, which is formed between the shoes of each pair of shoes. The brackets 9 and 10 which form the shoes are tapered downwardly, and the arms 15 and 16 are also tapered downwardly. The bearing and retaining bracket is secured within the shoes and to the body of the tie through the medium of a pair of bolts 21, extending through a pair of the shoes and over the top edge of the arms 16. That por-

tion of the top edges of the arms 15 16, as well as the members 14, which is arranged between the shoulders 17 18 and the lips 19 20, is cut away, so as to form a seat 22 for the base of the rail, the base of the rail at one side also extending under the lips 19 20 and the other side of the base of the rail bearing against the shoulders 17 18. When the track-rail is in position, it rests upon the seat 22, and the base of the rail is positioned in a manner as hereinbefore referred to. To further retain the rail in position, a dog or brace is employed and which is pivoted to one of the shoes. The dog or brace is indicated by the reference character 23 and its pivot by 24. The dog or brace at its lower portion extends in the shoe, and when in its locking position the dog or brace engages in a notch 25, formed in the arm, and at its upper end bears against the web of the rail. When the dog or brace is in its locking position, it has a wedge action bearing firmly against the web of the rail and against the wall of the notch.

To set the tie in position, the same is arranged transversely of the track-bed with the shoes suitably arranged in position, the combined bearing and retaining brackets are inserted in the shoes, the means for retaining the brackets within the shoes placed in position, the track-rails mounted upon the brackets in the manner as hereinbefore set forth, and the dog moved into position and retained in such locking position. When the tie is in position, the flanges 6 and cleats 7 engage in the track-bed and prevent displacement of the tie. To give additional resistance, a bracket 26 is secured to the upper face of each of the end portions 1 2 near each side edge thereof at the outer side of the bearing and retaining brackets, and said brackets 26 bear against the outer face of the members 14.

It is thought the many advantages of a metallic railway-tie constructed in accordance with the foregoing description, taken in connection with the accompanying drawings, can be thoroughly understood, and it will furthermore be evident that changes, variations, and modifications can be resorted to without departing from the spirit of the invention or sacrificing any of its advantages, and I therefore do not wish to restrict myself to the details of construction as herein shown and described, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A metallic railway-tie comprising a body portion, shoes arranged at each end thereof, and a combined bearing and retain-

ing bracket mounted in the shoes at each end of the body portion.

2. A metallic railway-tie involving a body portion having longitudinally - extending
5 flanges and obliquely-extending cleats, said flanges and cleats adapted to engage in the track-bed to prevent displacement of the tie.

3. A metallic railway-tie involving a body
10 portion, a plurality of pairs of longitudinally-extending shoes mounted upon each end of the body portion, and a combined bearing and retaining bracket mounted in the shoes at each end of the body portion of the tie.

15 4. A metallic railway-tie involving a body portion provided with means for engaging the track-bed to prevent displacement thereof, a transversely-extending combined bearing and retaining bracket mounted upon each
20 end of said body portion and provided with a plurality of shoulders and lips, and means for retaining the brackets upon the ends of the body portion.

5. A metallic railway-tie involving a body
25 portion, longitudinally - extending shoes mounted upon each end of said body portion, a combined bearing and retaining bracket mounted in the shoes at each end of said body portion, and means extending through
30 the shoes for retaining the brackets in position.

6. A metallic railway-tie involving a body
35 portion, shoes mounted upon the upper face of said body portion at each end thereof, and a bracket mounted in the shoes at each end of the body portion, said brackets provided with a plurality of seats, shoulders and lips for supporting and retaining a track-rail.

40 7. A metallic railway-tie involving a body portion, shoes mounted upon the upper face of said body portion at each end thereof, a bracket mounted in the shoes at each end of the body portion, said brackets provided
45 with a plurality of seats, shoulders and lips for supporting and retaining the track-rail, and means extending through the shoes for retaining the brackets in position.

50 8. A metallic railway-tie involving a body portion, shoes mounted upon the upper face

of said body portion at each end thereof, a bracket mounted in the shoes at each end of the body portion, said brackets provided with a plurality of seats, shoulders and lips for supporting and retaining a track-rail, means
55 extending through the shoes for retaining the brackets in position, and retaining-dogs for one side of the track-rail.

9. A metallic railway-tie involving a body
60 portion having longitudinally - extending flanges adapted to engage in the track-bed to prevent displacement of the tie in one direction and further provided with obliquely-extending inclined cleats engaging in the track-bed to prevent the displacement of the
65 tie in another direction, and a plurality of longitudinally - extending shoes mounted upon the upper face of said body portion, combined with means mounted in said shoes for connecting the track-rail with the body
70 portion.

10. A metallic railway-tie involving a flat body portion and a plurality of upwardly and longitudinally extending shoes suitably connected with the upper face of said body
75 portion, combined with means mounted in said shoes for supporting and connecting the track-rails upon and to the body portion.

11. A metallic railway-tie involving a body portion, longitudinally-extending shoes
80 suitably mounted upon the upper face thereof, and combined track-rail bearing and retaining brackets mounted in said shoes.

12. A metallic railway-tie involving a body portion provided with longitudinally-
85 extending flanges and obliquely-extending cleats, said cleats and flanges preventing displacement of the tie when in position, combined with track-rail bearing and retaining brackets removably connected with the body
90 portion, said brackets provided with a plurality of shoulders and lips.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT S. SCOTT.

Witnesses:

W. W. MARTIN.

GRANT A. ROBBINS.