

No. 764,903.

PATENTED JULY 12, 1904.

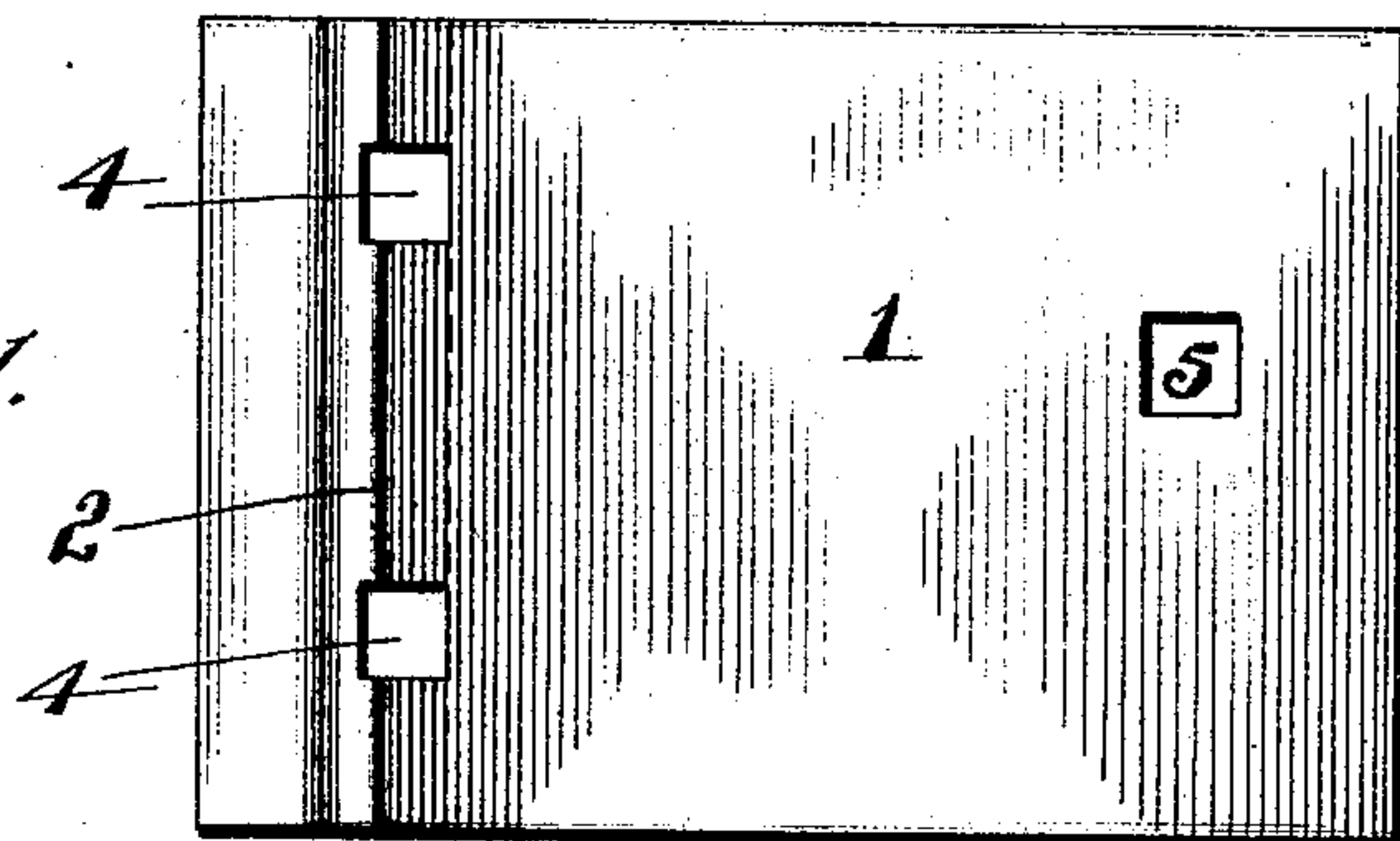
A. C. SHAND.

TIE PLATE.

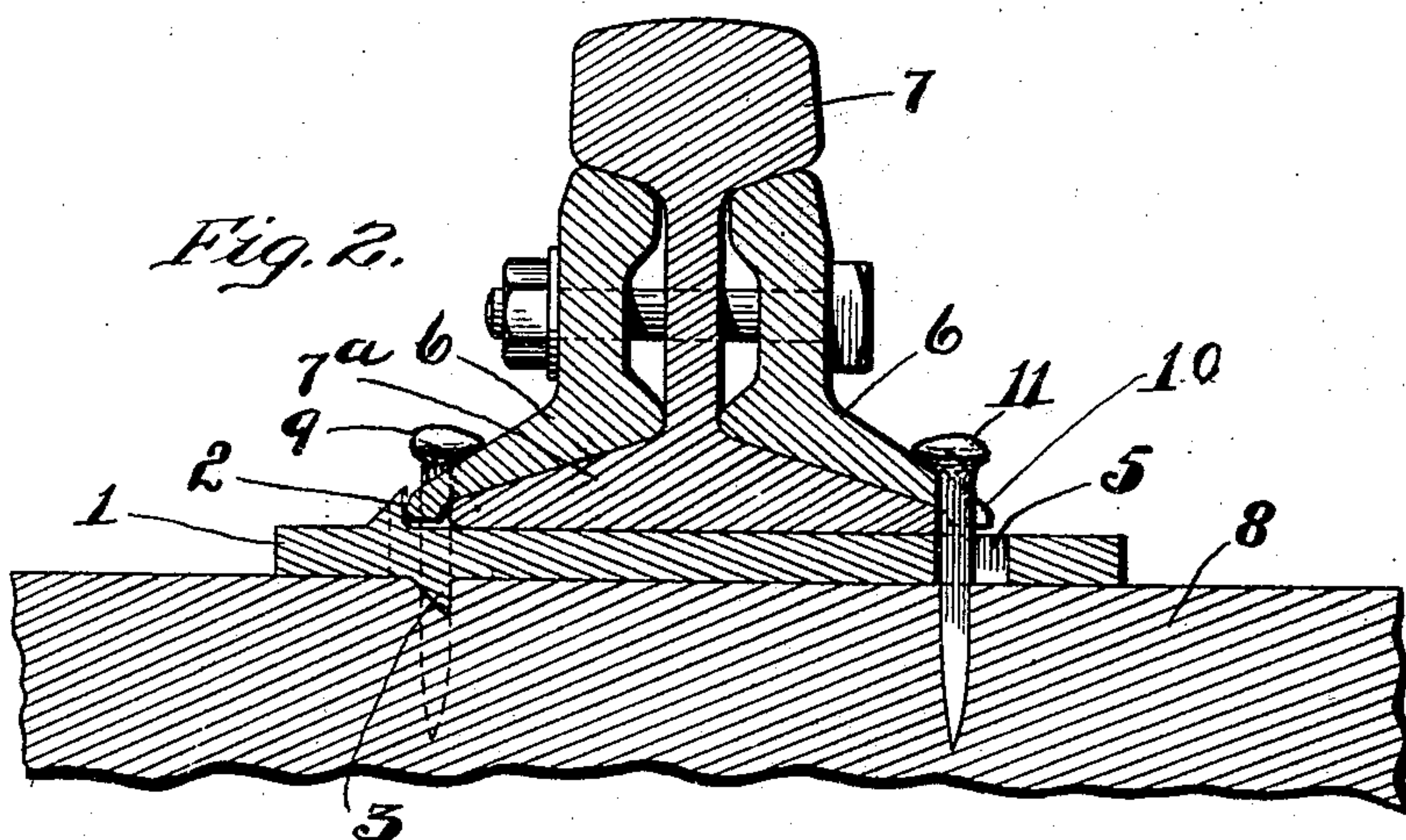
APPLICATION FILED APR. 6, 1904.

NO MODEL.

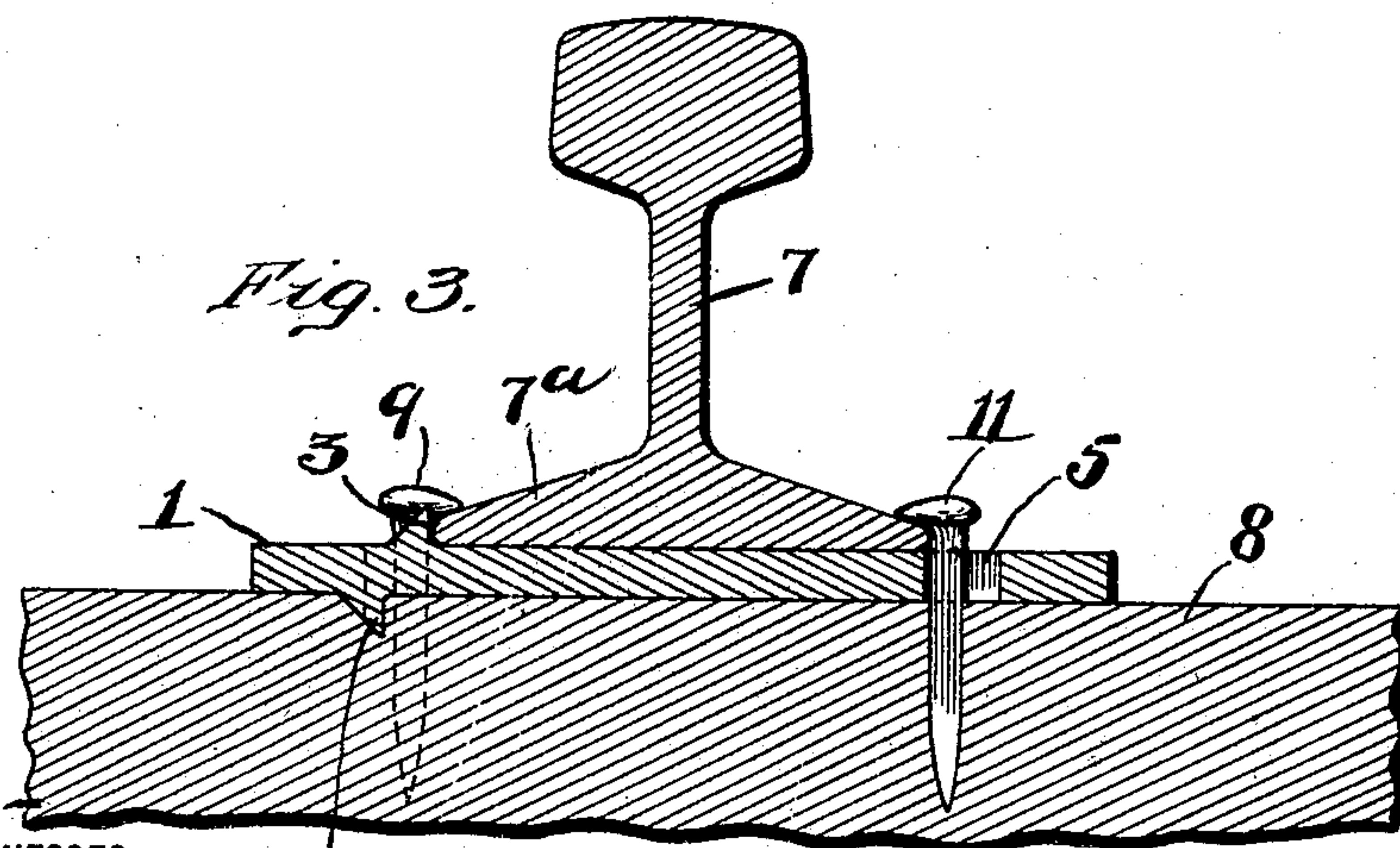
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 764,903, dated July 12, 1904.

Application filed April 6, 1904. Serial No. 201,787. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER C. SHAND, a citizen of the United States, residing at Bala, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Tie-Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view of my improved tie-plate. Fig. 2 is a cross-section of a rail, splice-bar, and tie-plate, showing the latter as in use applied to a rail-joint. Fig. 3 is a similar cross-section of the tie-plate as used beyond a joint and splice-bars.

The object of this invention is to provide a rail-tie plate of simple construction and adapted to be used either in connection with the splice-bars at the joint of two rails or with the part of a rail intermediate of such joints by merely reversing the tie-plate, whereby a saving in cost and other advantages herein-after mentioned are secured.

The precise nature of the invention will clearly appear from the following description.

In the drawings, 1 is the tie-plate, which is made of a bar or plate of suitable metal, preferably of rolled steel. This plate is formed with an angular rib or shoulder 2, projecting from one side and adjacent to one end thereof, and a similar rib 3 or shoulder, Figs. 2 and 3, projecting from the opposite side of the plate; also with one or more—two in the present instance—spike-holes 4, Fig. 1, between said ribs and a spike-hole 5 adjacent to the opposite end of the plate. The distance apart of the vertical planes of the inner sides or faces of said ribs 2 and 3 is substantially equal to the thickness of the part of the usual splice-bars 6, for securing the ends of two rails at the joint thereof, that project beyond the foot 7<sup>a</sup> of a rail 7, as seen in Fig. 2. The distance apart of the inner edge of the hole or holes 4 and the hole 5 is about equal to the width of the foot of the rail.

Having described the construction of my invention, I proceed to describe the mode of use thereof as follows: In applying the device at the rail-joint it is laid on the tie 8; with the

outer one, 2, of the ribs on the upper side and the inner face of said rib abutted against the edge of the splice-bar 6 on that side. Spikes 9 are entered in the usual slots in the edge of the splice-bar, one of which slots (marked 10) is shown in Fig. 2, and said spikes are driven home through the holes 4, respectively, into the tie 8. The overhanging heads of the spikes contacting with the top of the splice-bar carry down the latter, and with it the rail, and at the same time force the underneath rib 3 into the tie, as seen in Fig. 2. A spike 11 is likewise driven down through the splice-bar and hole 5 into the tie until the tie-plate lies flat throughout upon the tie, all as seen in Fig. 2. Thus the rail, splice-bars, and tie-plate are very securely held to the tie and against lateral displacement. In applying the tie-plate to a rail beyond the joint—i. e., where the splice-bars are not used—I place the same on the tie with the rib 3 on the upper side and the inner face of the latter against the edge of the foot of the rail, as seen in Fig. 3. Spikes 9 are driven through the holes 4 into the tie and a spike 11 through the hole 5 against or close to the foot of the rail until the rib 2 is sunk into the tie 8 and the tie-plate lies flat upon the latter, as seen in said Fig. 3. The inner end of the spike-holes 4 should extend substantially to the inner edge of the rib 3, as shown, or it may be past the same. In either case said holes will cut out that part of said rib. I would also usually make the outer ends of said holes cut through or partly through the outer rib 2, as seen in Fig. 1 and indicated by dotted lines in Fig. 2. This cutting in breaks the continuity of the ribs, thereby making it somewhat easier to force the same into the tie and also preventing lateral displacement of the tie-plate. The spike-opening 5 instead of being a hole may be a slot open at the outer end.

A salient advantage of my improved tie-plate obtains in that it may be readily made by passing through suitable rolls for giving the required configuration, which rolled bar may be cut into suitable lengths for tie-plates.

Another advantage obtains in that although of simple construction the tie-plate may, as before mentioned, be used for rails of differ-



ent sizes, either at joints or intermediate the same. In other words, the plates may be uniform and interchangeable throughout an entire railroad system or systems.

5 Still another advantage is that the tie-plates are strong and durable as well as reversible, because the ribs on opposite sides of the plate are so situated with relation to each other that they form strengthening-ribs along the sur-  
10 faces of the plate at the points where the greatest strain is applied in use.

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

1. The hereinbefore-described reversible  
15 tie-plate comprising a plate of suitable metal, having the angular ribs, or shoulders on opposite sides and adjacent to one end thereof, and having the spike holes, or hole, adjacent to and between said ribs, the distance apart  
20 of the planes of the inner sides of said ribs being substantially equal to the difference between the width of the foot-flange of a rail and width of the foot-flange of a splice-bar, substantially as and for the purpose set forth.

25 2. The hereinbefore-described reversible tie-plate comprising a plate of suitable metal, having the angular ribs, or shoulders on op-

posite sides and adjacent to one end thereof, a spike hole, or holes adjacent to and between said ribs, and a spike hole or holes adjacent  
30 to the opposite end of said plate, the distance apart of the planes of the inner sides of said ribs being substantially equal to the difference between the width of the foot-flange of a rail and width of the foot-flange of a splice-bar  
35 being substantially as shown and described for the purpose set forth.

3. The hereinbefore-described reversible tie-plate, comprising a plate of suitable metal having the angular ribs or shoulders on op-  
40 posite sides and adjacent to one end thereof, the distance apart of the lines of the inner sides of said ribs being substantially equal to the difference between the width of the foot-flange of a rail and the width of the foot-  
45 flange of a splice-bar, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature this 15th day of March, A. D. 1904.

ALEXANDER C. SHAND.

Witnesses:

GEO. L. ROTE,

WALTER C. PUSEY.