

No. 687,965.

Patented Dec. 3, 1901.

H. A. JOURDAN.
RAILWAY TIE PLATE AND BRACE.

(Application filed June 13, 1901.)

(No Model.)

Fig. 1.

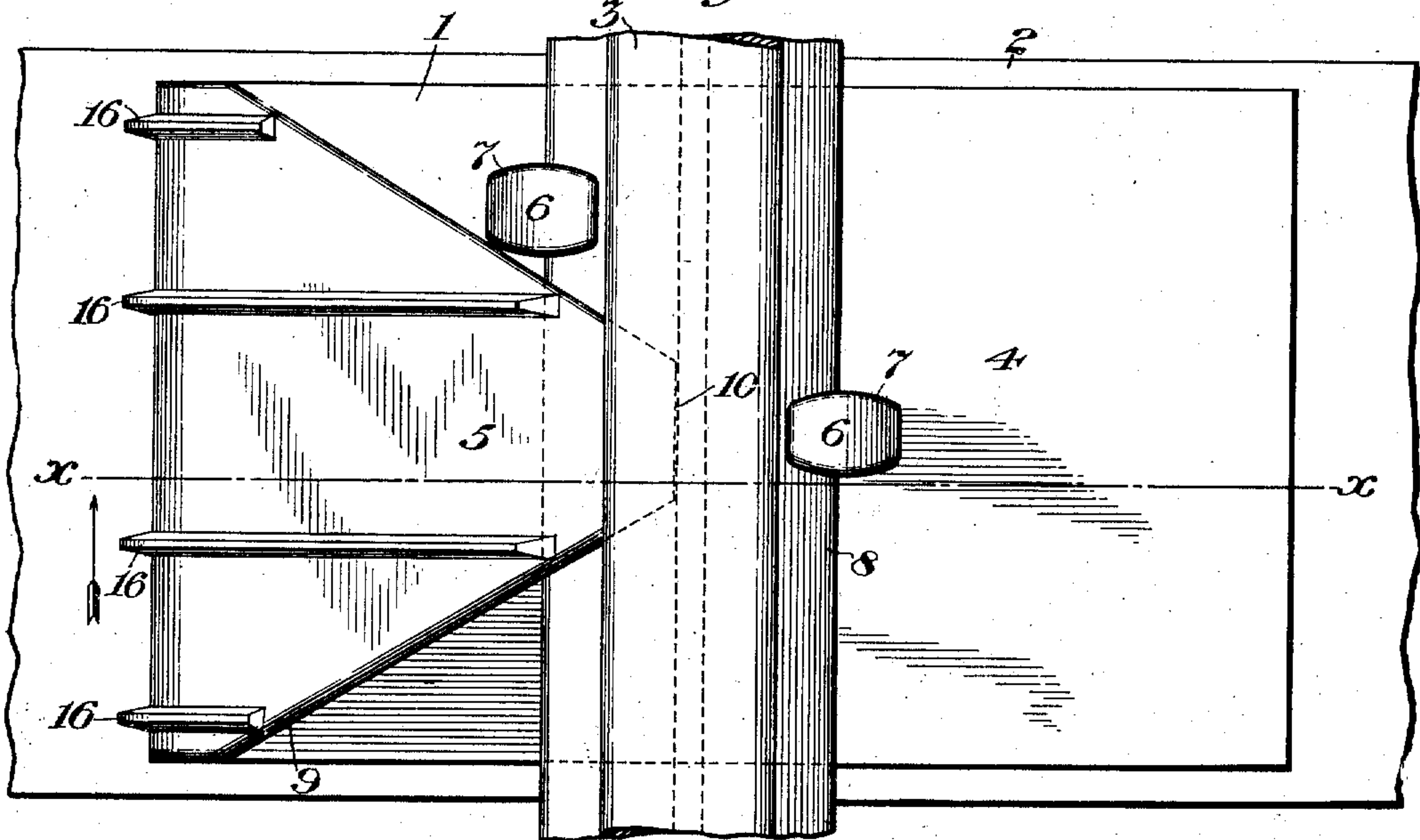


Fig. 2.

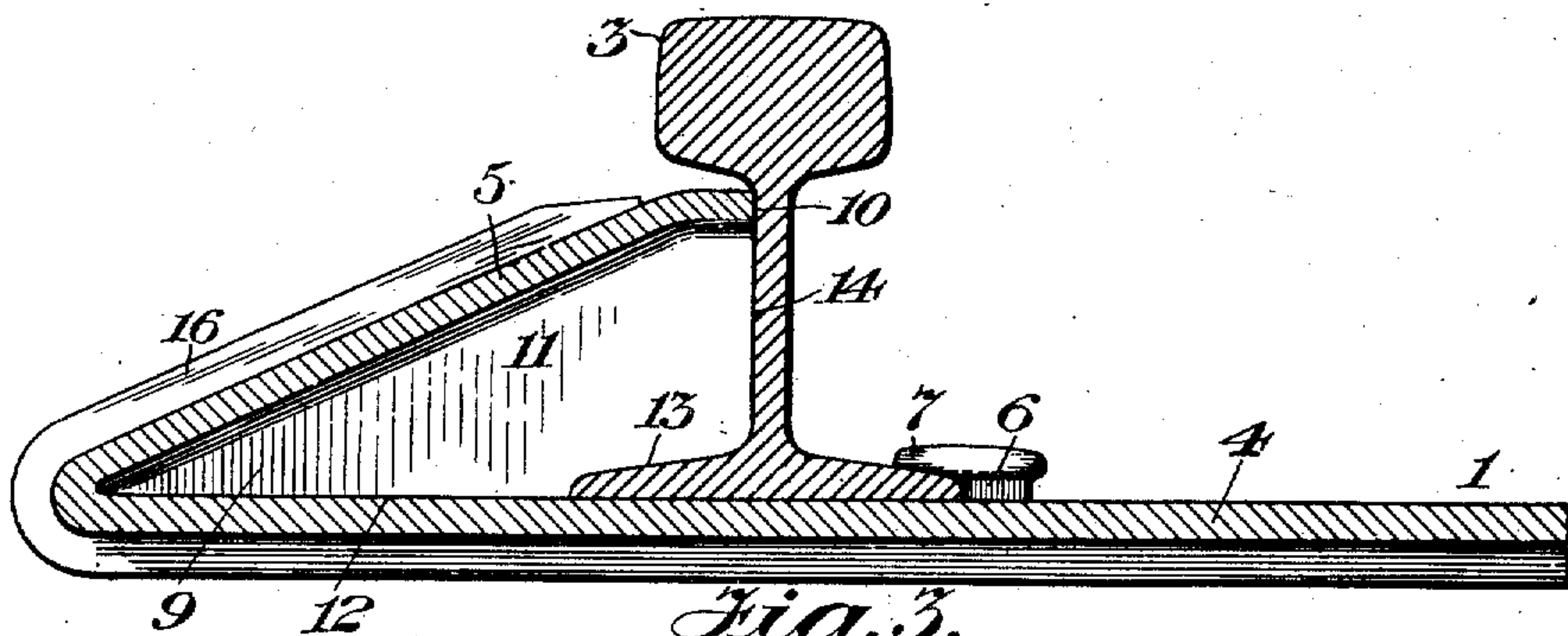
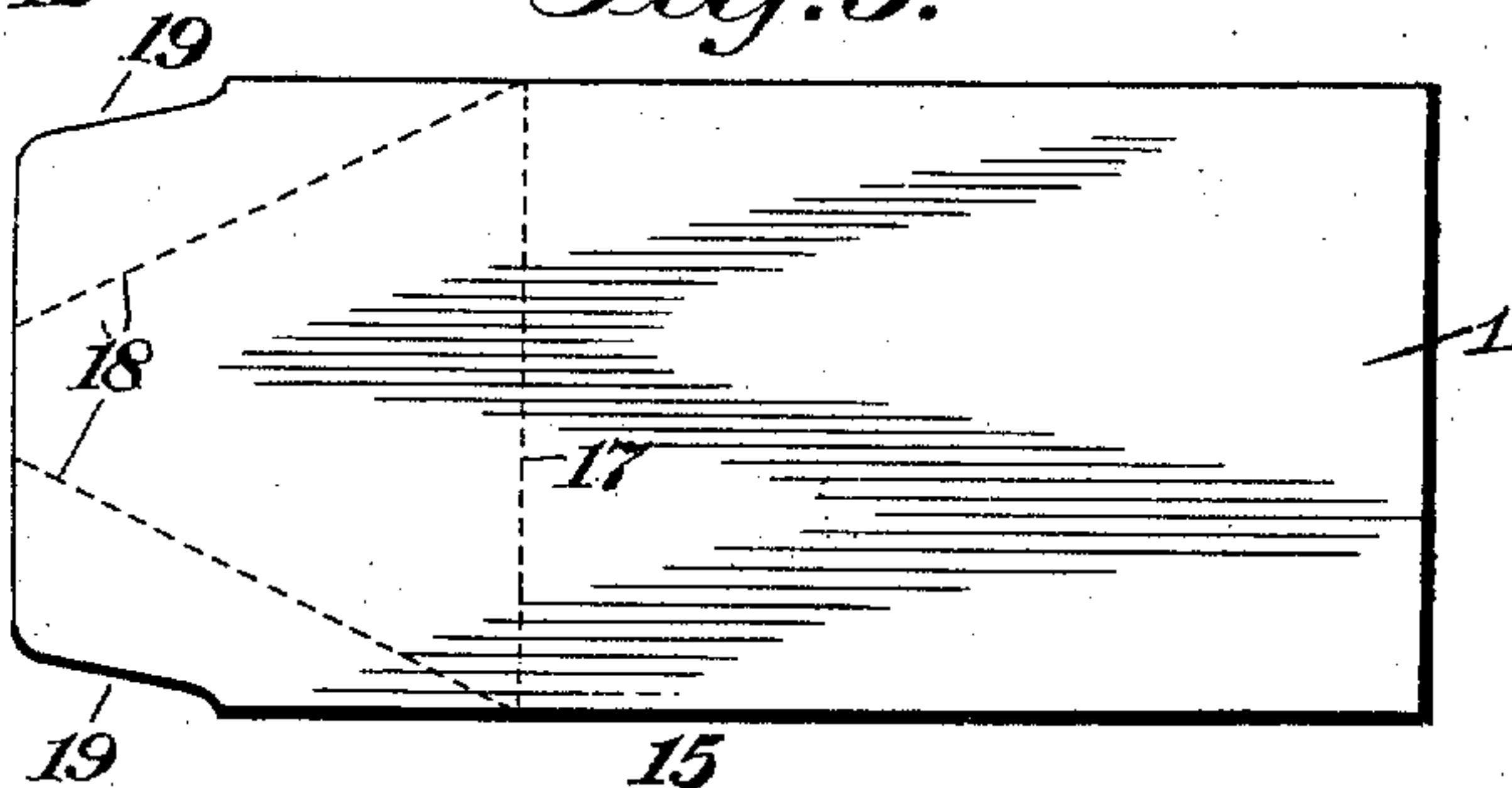


Fig. 3.



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HENRY A. JOURDAN, OF BROOKLYN, NEW YORK.

RAILWAY TIE-PLATE AND BRACE.

SPECIFICATION forming part of Letters Patent No. 687,965, dated December 3, 1901.

Application filed June 13, 1901. Serial No. 64,455. (No model.)

To all whom it may concern:

Be it known that I, HENRY AUGUST JOURDAN, a citizen of the Republic of France, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Railway Tie-Plates and Braces, of which the following is a specification.

This invention relates to railway tie-plates and braces; and it has for its object to provide an improved combined device of this class which will operate effectually to prevent spreading or upsetting of the rails and to protect the ties from the abrasive and cutting action of the rails.

In carrying out my improvement I provide a combined tie-plate and brace which is preferably of integral formation and may be cut, stamped, or rolled from a single sheet of suitable metal, thus obtaining a device of rigid integral formation and relatively simple and inexpensive in manufacture.

In the drawings, Figure 1 is a plan view of a portion of a tie or sleeper and a rail provided with my improved tie-plate and brace. Fig. 2 is a sectional view of the same, taken upon the line $x x$, Fig. 1. Fig. 3 is a plan view of a metal blank from which the combined tie-plate and brace may be conveniently and inexpensively formed.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates my improved combined tie-plate and brace, which is, as illustrated, operatively associated with the tie or sleeper 2 and the rail 3. The improved tie-plate and brace comprises a tie-plate proper, 4, and a brace 5, which projects upwardly and inwardly toward the rail from the tie-plate proper, 4, which latter is passed between the rail and the tie or sleeper in the customary manner. The tie-plate, rail, and sleeper may be held together in the customary manner by means of spikes 6 of the desired number, which are passed through the tie-plate proper, 4, and into the tie or sleeper 2, and the heads 7 of which are engaged with the base flange or flanges 8 of the rail. The brace 5 preferably projects at an angle upwardly and inwardly into engagement with the side of the tie-plate proper, 4, and consists of a broad tapering body 9, which is engaged

at its smaller end portion 10 with the side of the rail and is provided with depending side wings or flanges 11, which bear at their lower edges, as at 12, upon the tie-plate proper, 4, at one side of the rail and upon the base-flange 8 of the rail at one side of the latter, as at 13. The outer or upright edges 14 of the side wings or flanges 11 bear upon and accurately fit the side surface portion of the rail and in connection with the edge portions 13 of the side wings or flanges 11 and the smaller end portion 10 of the body 9 form a continuous bearing edge surface which accurately fits the side and base-flange of the rail. As illustrated, the brace 5 is preferably arranged to bear upon the outer side and base-flange portions of the rail and in this position effectively prevents spreading of the rail with relation to the rail which it parallels and also prevents upsetting of the rail or variation of the same from the true vertical operative position. One of the braces 5 above described may, it is manifest, be arranged to bear upon the rail at each side of the same, thereby securing a greater degree of positiveness and rigidity in the bracing of the rail against lateral movement or other displacement.

In the preferred form of construction the tie-plate proper, 4, and the brace 5 are of integral construction, being formed of a single plate or blank 15, which may be formed or rolled from steel or iron or similar stock, enabling the blank to be folded to form the brace 5. The blank 15 is preferably rolled or produced in the form of channel-iron, as illustrated, the longitudinal ribs or flanges 16 serving to strengthen the device against buckling or bending and enabling the tie-plate proper, 4, to be firmly secured in position upon the tie or sleeper 2 by forcing said ribs or flanges into the tie or sleeper. When the blank has been cut to the required dimensions, one end portion of the same is bent or folded upwardly, as a fold-line 17, at the proper angle to provide for the required angular projection of the brace 5 with respect to the tie-plate proper, 4. The opposite side and corner portions are then bent or folded downwardly upon fold-lines 18 to produce the side wings or flanges 11 of the body 5. In folding or bending the blank as last stated the proper portions of the blank are incor-

porated in the side wings or flanges 11 to cause the lower edges 12 of the same to rest or bear upon the tie proper, 4, when the outer end portion 10 of the body 9 of the brace 5 is in proper position to engage with the side of the rail at the proper point. To form the lower edge portions of the side wings or flanges 11 into the desired conformation to fit the base-flange of the rail, as at 13, the extreme end corner portions 19 of the side wings or flanges 11 are cut away, as illustrated, and this cutting away of the corner portions 19 is preferably performed before the blank 15 is bent or folded to produce the brace 5.

The operation and advantages of my improved tie-plate and brace will be readily understood. The device in its completed form is placed upon the tie or sleeper, the tie-plate proper being fitted to the upper surface of the same, and the ribs or flanges 16, which complete the channel-iron formation of the blank 15, may be forced into the tie or sleeper to prevent lateral displacement of the device. The rail is then placed upon the tie-plate proper transversely of the same in such position that it fits snugly against the smaller or upper end 10 of the body 9 of the brace, the base-flange 8 of the rail at one side fitting snugly against the lower edge portions 13 of the side wings or flanges 11 of the body 9 of the brace 5. A suitable number of spikes 6 are then passed through suitable openings or spike-holes 6^a, formed in the tie-plate proper, 4, and the spikes are firmly embedded at their lower ends in the tie or sleeper 2, their heads engaging with the upper surfaces of the base-flanges 8 of the rail in the customary manner. With the parts in this position the side of the rail bears firmly against the upper and smaller end portion 10 of the body 9 of the brace 5 and against the upright edge portions 14 of the side wings or flanges 11 of the body 9 of the brace 5, and the base-flange 8 of the rail bears firmly against the edge portion 13 of said side wings or flanges 11 in the cut-out corners 19 of said side wings or flanges. The rail is thus positively braced in a considerable portion of its side area by means of the brace 5, and the base-flange of the same is also borne upon by the brace to prevent vertical movement of the rail. The spikes 6 supplement the bracing and binding function of the brace 5. The side wings or flanges 11 serve to effectually support the body 9 of the brace 5 in obliquely upwardly projecting relation and prevent collapse of the same due to the exertion of any pressure upon said body 5 of the brace. It will be noted that the brace 5 presents to the rail a three-sided angular construction which is superior in point of rigidity and strain resistance. When two of the braces are provided for each of the ties or sleepers, being formed at opposed ends of the tie-plate proper, 4, the rail is slipped endwise between said braces, and the spikes 6 may be entirely dispensed with, if desired, depending upon

the closeness of fit and binding relation existing between the rail and the two braces. The brace being integrally connected with the tie-plate proper is incapable of any movement or displacement relative thereto, the result in use being the highest degree of rigidity and durability and length of life of the device.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

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

1. An improved tie-plate and brace, comprising the tie-plate proper provided at one end with an integral inwardly-projecting brace comprising a body formed to engage at its free end with the side of the rail, and depending flanges formed to engage with the upper surface of the tie-plate proper.

2. An improved tie-plate and brace, comprising the tie-plate proper provided at one end with an integral inwardly-projecting brace comprising a body formed to engage at its free end with the side of the rail, and depending flanges formed to engage with the upper surface of the tie-plate proper, and with the base-flange of the rail.

3. An improved tie-plate and brace, comprising the tie-plate proper provided with an integral brace consisting of a body provided with depending side wings or flanges, said body and said side wings or flanges being formed and arranged to bear operatively at their edge portions in engagement with the side of the rail and with the upper surface of the tie-plate proper.

4. An improved tie-plate and brace, comprising, in integral construction a tie-plate proper provided at one end with an inwardly-projecting brace consisting of a body provided with depending side flanges or wings, said body and said side flanges or wings being formed in their edge portions to engage with and fit the side and base-flange of the rail, said brace being formed of a single blank which is bent or folded transversely to form the body of the brace, and the corner and side portions of said body of the brace being folded downwardly to form said side wings or flanges and cut away to fit the base-flange of the rail.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

HENRY A. JOURDAN.

Witnesses:

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L. DUANE.