

No. 843,475.

PATENTED FEB. 5, 1907.

W. G. MARTAN.  
METALLIC RAIL TIE,  
APPLICATION FILED SEPT. 20, 1906.

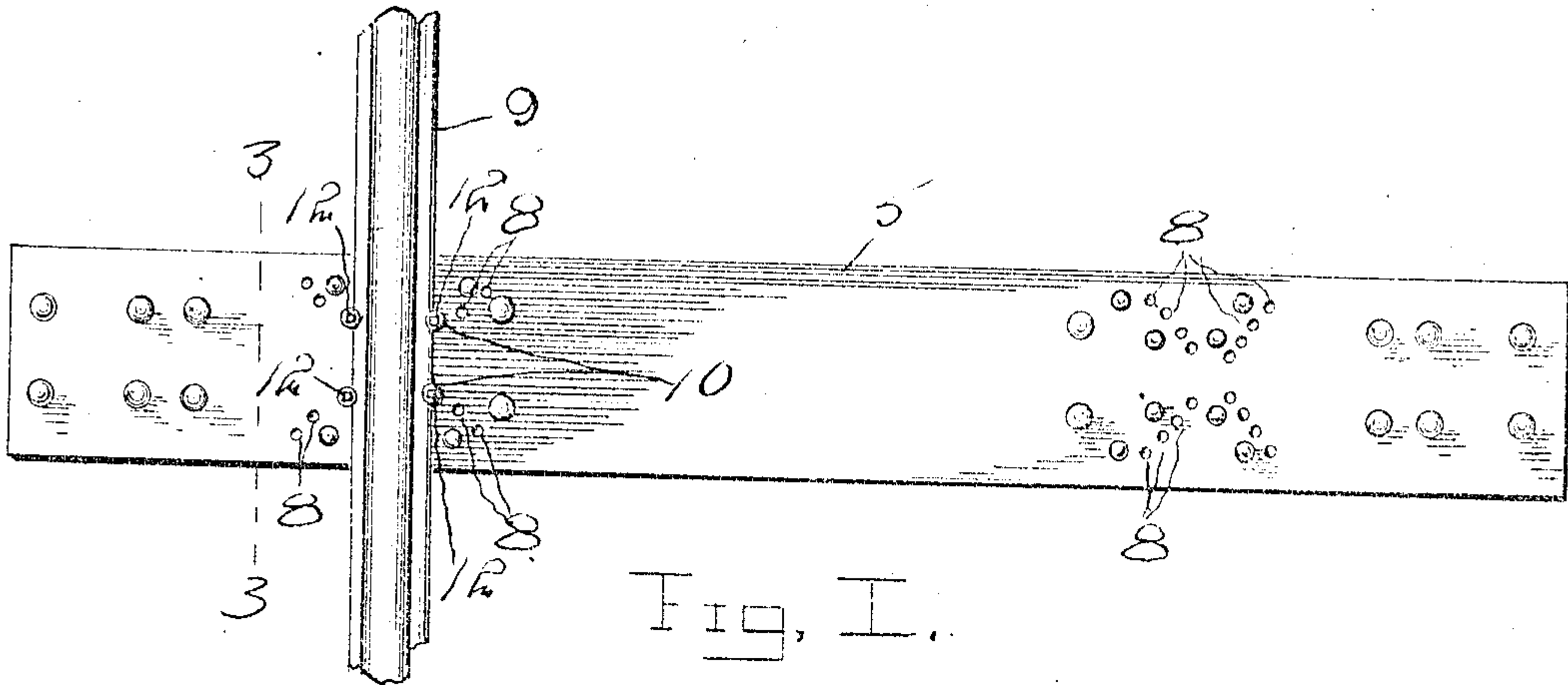


Fig. 1.

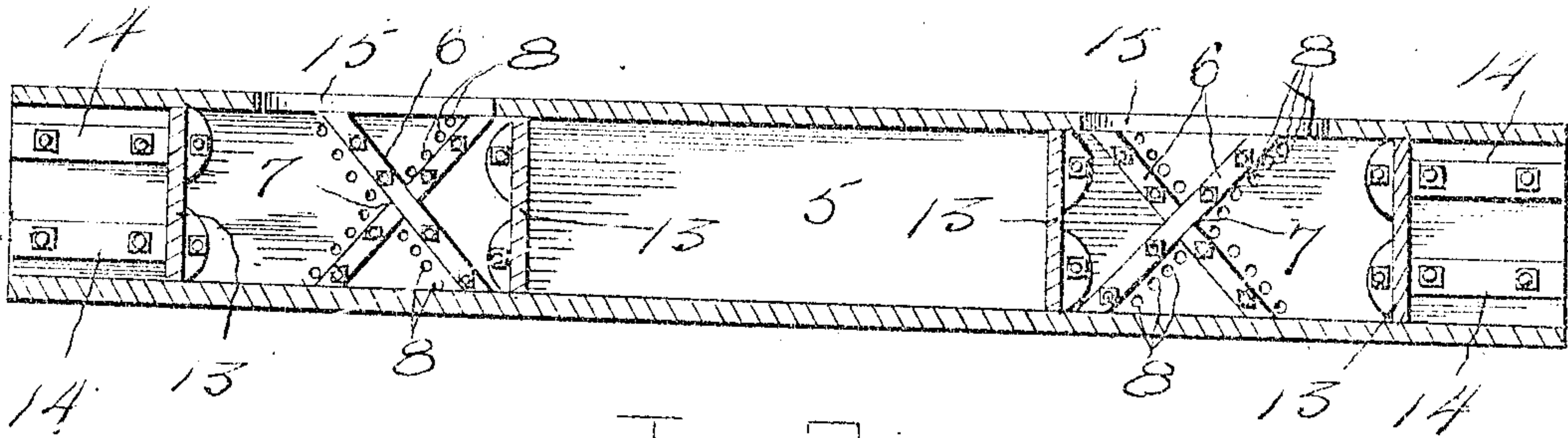


Fig. 2.

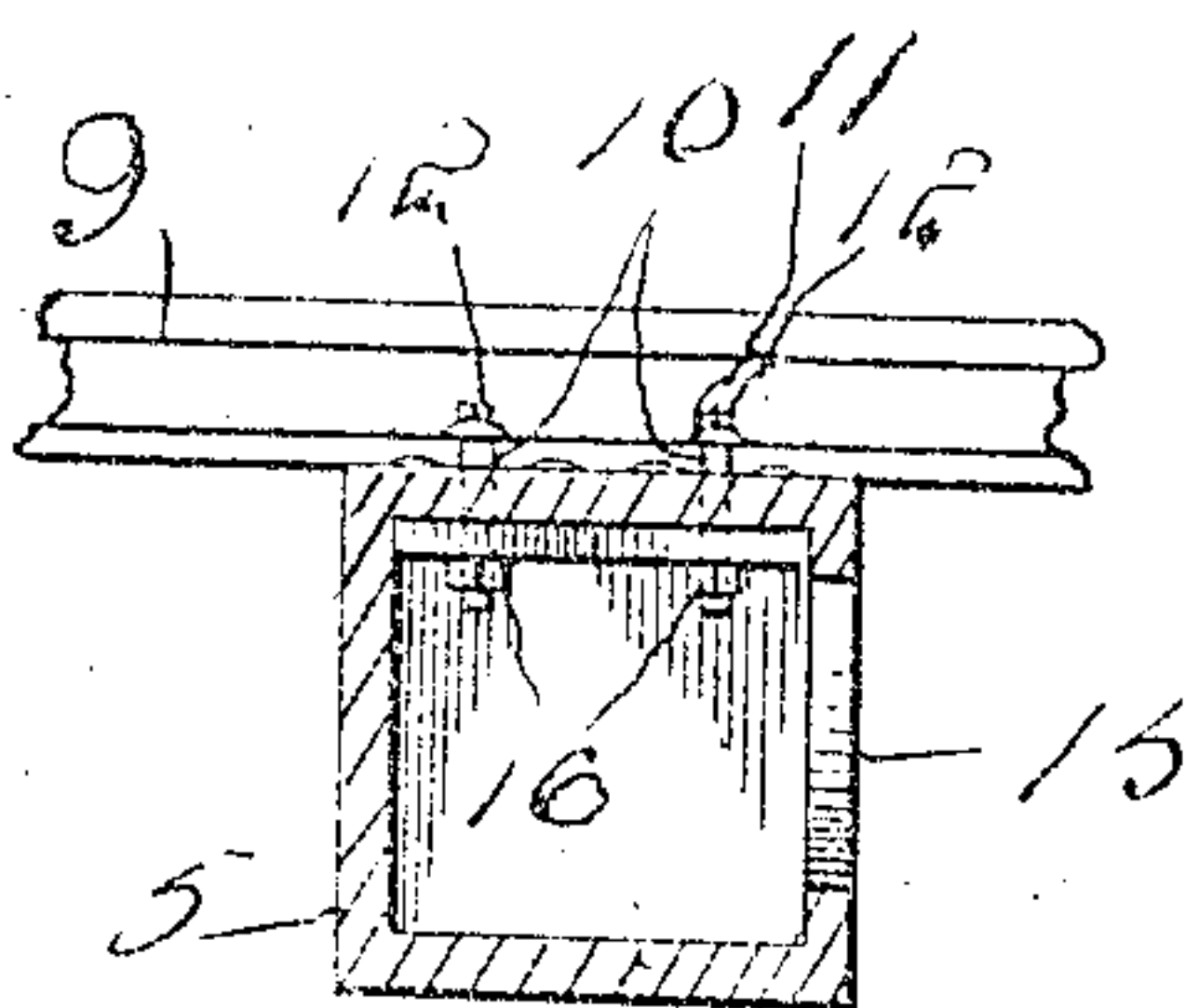


Fig. 3.

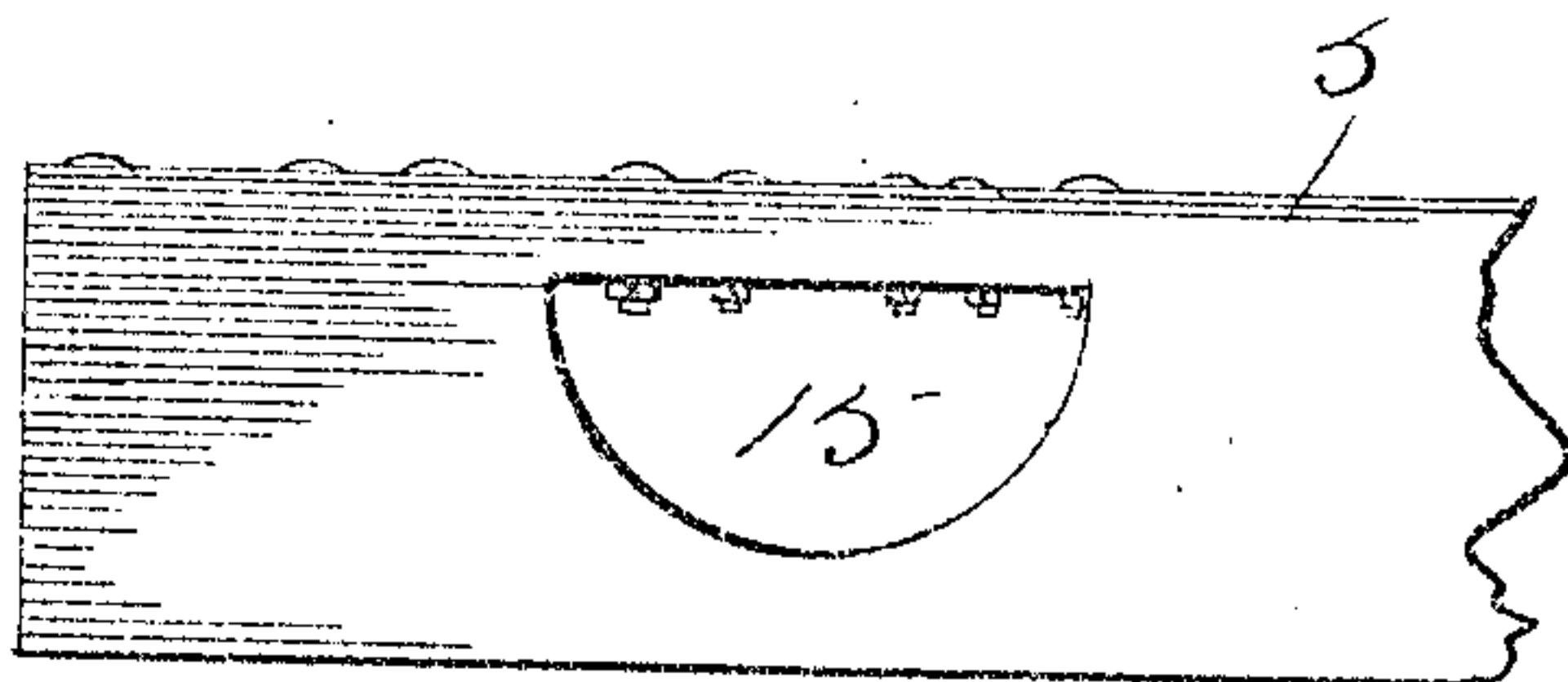


Fig. 4.

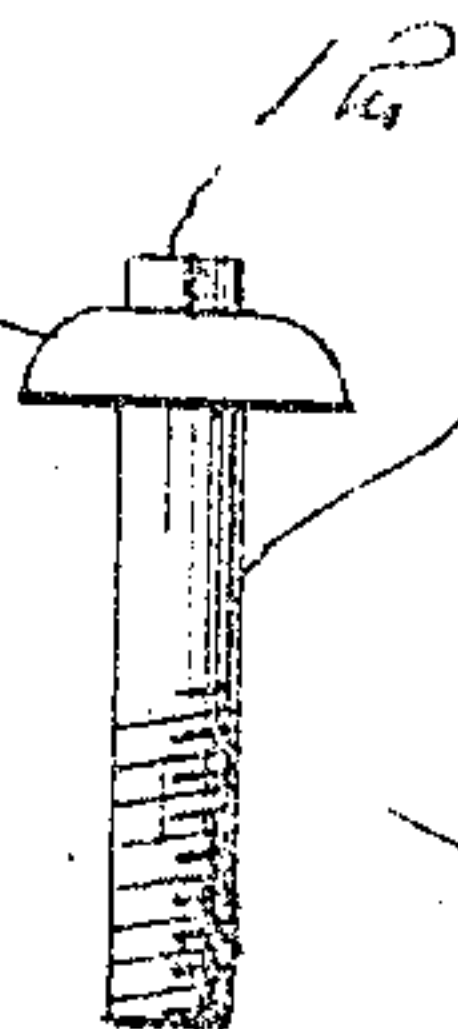


Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## METALLIC RAIL-TIE.

No. 843,475.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed September 20, 1906. Serial No. 335,476.

*To all whom it may concern:*

Be it known that I, WILLIAM GEORGE MARTAN, a citizen of the United States, residing at Otter Creek, in the county of Levy, State of Florida, have invented certain new and useful Improvements in Metallic Rail-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference generally to metallic railroad-ties, and especially to ties of that type provided with bearers interiorly arranged and acting as supports for the top portion of the ties when a train is passing over the rails laid thereon.

The objects of the invention include the provision of means for retaining the bearers in place within the ties, the provision of supports located on the under side of the top portion of the ties adjacent the bolts passing through the rails for preventing any movement thereof, and the formation in one side of the ties of semicircular openings by means of which access is had to the interior of the ties and the nuts held in place on the rail-bolts when the latter are tightened.

With the above and other ends in view the invention consists in the construction, combination, and arrangement of parts, all as hereinafter fully described, specifically claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a tie constructed in accordance with this invention. Fig. 2 is a longitudinal horizontal section through the tie. Fig. 3 is a transverse vertical section taken on the line 3-3 of Fig. 1. Fig. 4 is a detail view, in side elevation, of a portion of the tie shown in Fig. 1. Fig. 5 is an enlarged detail view of one of the rail-bolts.

Like parts are designated by corresponding reference-numerals in the several views.

Referring more particularly to the drawings, the tie 5 is shown as tubular in form, preferably rectangular in cross-section, and constructed of steel or galvanized iron. Secured to the under face of the top portion of the tie at opposite ends thereof is an X-shaped brace 6, the members of which interlock with each other, as indicated by the numeral 7. The members of said brace may be separately formed and bolted to the under

face of the tie or, if preferred, may be cast integral with the tie.

The upper face of the tie is provided with a series of openings 8, arranged adjacent each brace 6 and following generally the shape thereof, so that the general appearance of each set of openings is likewise that of the letter X. Through said openings the rail-bolts 10 are passed, the heads thereof bearing against the bottom portion of the rails and the threaded ends extending into the interior of the ties. The heads 11 of said bolts are formed with a rectangular projection 12, by means of which the bolts may be rotated by a wrench or other tool.

Owing to the arrangement of the openings 8 as described, it will be obvious that any size rails 9 may be secured to the ties by merely fitting the rail-bolts in the corresponding openings.

Mounted within the interior of the tie on opposite sides of each brace 6 is a pair of bearers 13, bolted or secured in any other preferred way to the ties. The outer member of each pair of bearers is further held in place by means of a pair of longitudinally-disposed metal strips 14, secured to the under face of the top portion of the tie and bearing at their inner ends against the outer face of said bearers. The several bearers thus strengthen and support the tie at its weakest point—i. e., beneath the rails—and the outer member of each pair of bearers is further held in place by the strips 14, as above described.

One side of the tie is provided with a pair of semicircular openings 15, communicating with the interior of the tie between each pair of bearers, the purpose of such openings being to permit access to the interior of the tie to allow the workmen to attach the nuts 16 to the rail-bolts 10 in proper position with respect to the X-shaped braces 6. The bolts are then tightened through the projections 12 on their ends, as above described. When so positioned, one side of each of the several nuts will contact or approximately contact with the corresponding brace member, and any rotation of the nuts will be therefore prevented, thus holding the same firmly in their tightened position.

The end members of the bearers may be formed adjacent their bottom edges with a drain-hole to free the tie of any water which



may have entered the interior through the openings 15.

From the foregoing it will be obvious that the several bearers act as supports for the tie at its weakest point, that the end bearers are further retained in place by means of the several braces and strips, and that the arrangement of the openings 8 in the tie is such that rails of any desired size may be used in connection with the ties, and, finally, that the disposition of the X-shaped braces within the tie will prevent any rotation of the track-bolt nuts, the openings in the tie side enabling the workmen to readily position the nuts upon the bolts prior to their tightening.

The invention is susceptible of obvious modifications and changes within the scope of and without departing from the spirit of the appended claims, and limitation to the exact details of construction shown and described is therefore not intended.

What is claimed is—

1. A hollow metallic tie provided at opposite ends with a pair of spaced bearers interiorly arranged therein and located below the rails mounted on the tie, one side of said tie having an opening communicating with the space between each pair of bearers, to permit access thereto.

2. The combination, with a hollow metallic tie, and rails mounted thereon, of bolts for securing said rails in place, the lower ends of said bolts extending into the interior of the tie, and means located adjacent the under face of the tie for retaining said bolts in

place, one side of said tie being provided with openings communicating with its interior for permitting access to said means.

3. The combination, with a hollow metallic tie, and rails mounted thereon, of bolts for securing said rails in place, the lower ends of said bolts extending into the interior of the tie, nuts mounted on the lower ends of said bolts for retaining said bolts in place, and means mounted upon the under face of the top portion of the tie for preventing movement of the nuts, one side of said tie being provided with openings communicating with its interior for permitting access to said means.

4. The combination, with a hollow metallic tie, and rails mounted thereon, of bolts for securing said rails in place, the lower ends of said bolts extending into the interior of the tie, nuts mounted on the lower ends of said bolts, and an X-shaped brace secured to the under face of the top portion of the tie at opposite ends thereof and in contact with one side of the nuts, for preventing movement thereof, one side of said tie being provided with openings communicating with its interior for permitting access to said nuts, bolts, and braces.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM GEORGE MARTAN.

Witnesses:

E. H. YEARTY,  
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