

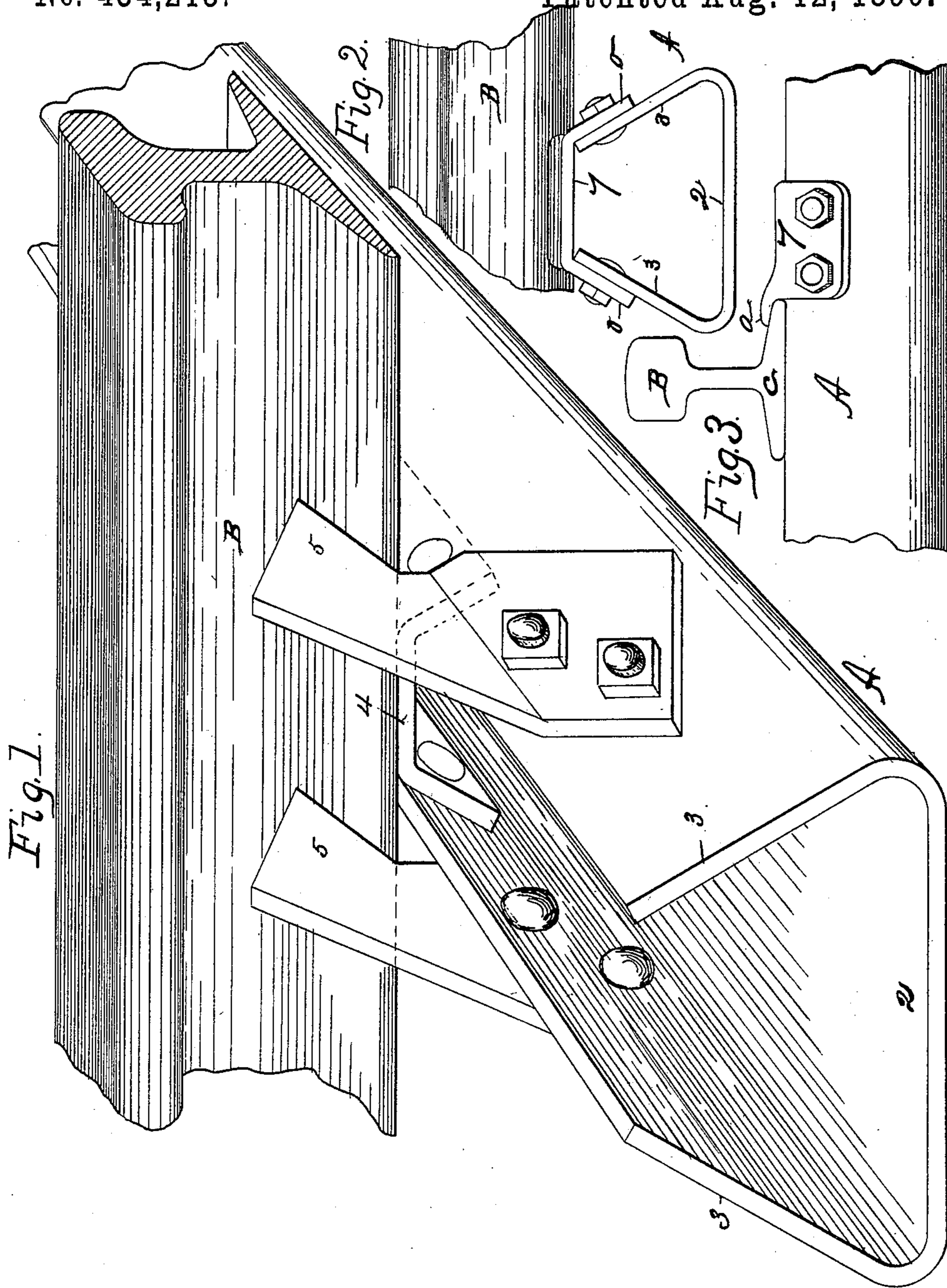
(No Model.)

2 Sheets—Sheet 1.

H. TAYLOR & D. E. SHERMAN.
METALLIC RAILROAD TIE.

No. 434,213.

Patented Aug. 12, 1890.



Witnesses.

G. M. Chamberlain

Amos J. Bellows

Inventor.

*William Taylor and
 Dwight E. Sherman,
 by Chapin & Co
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Fig. 6.

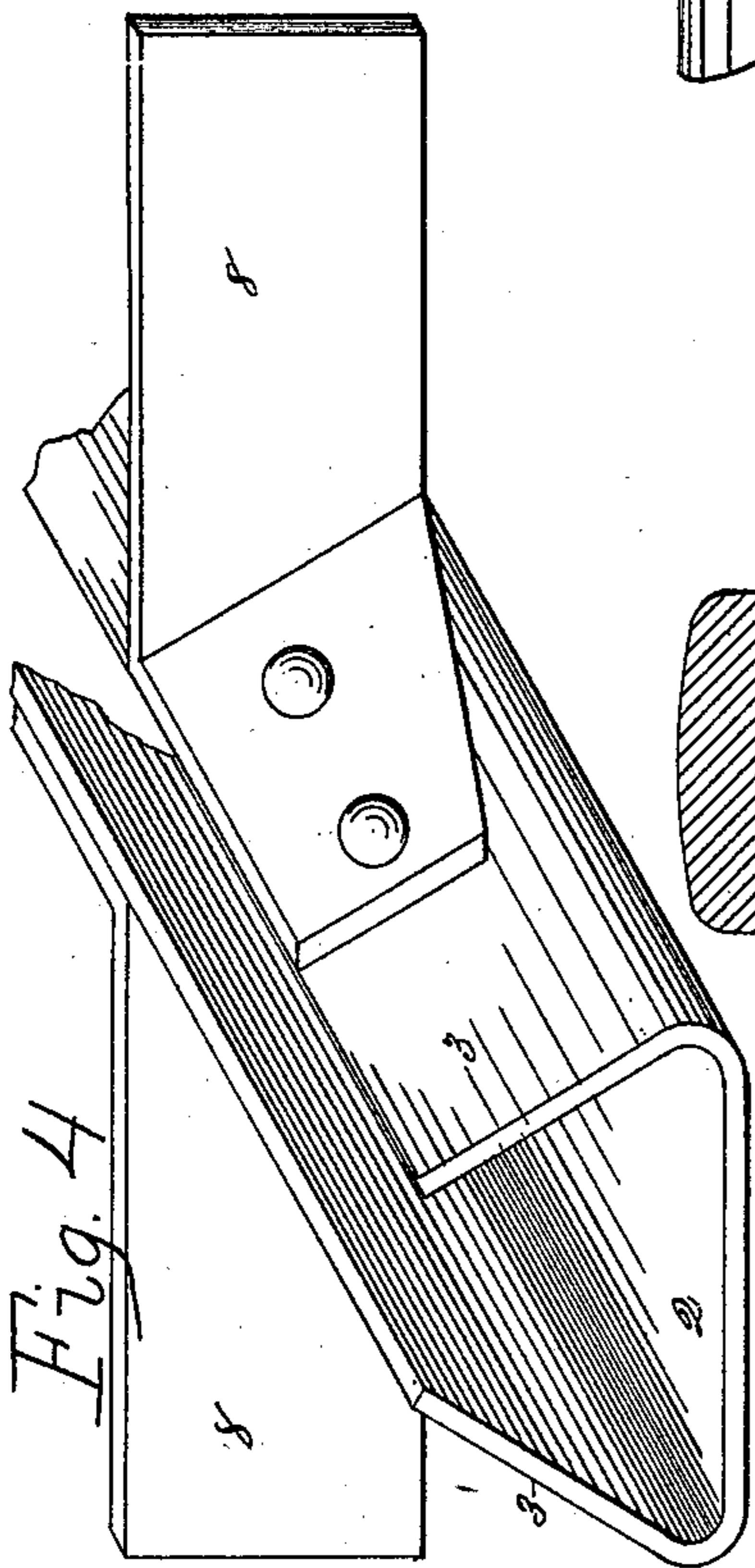
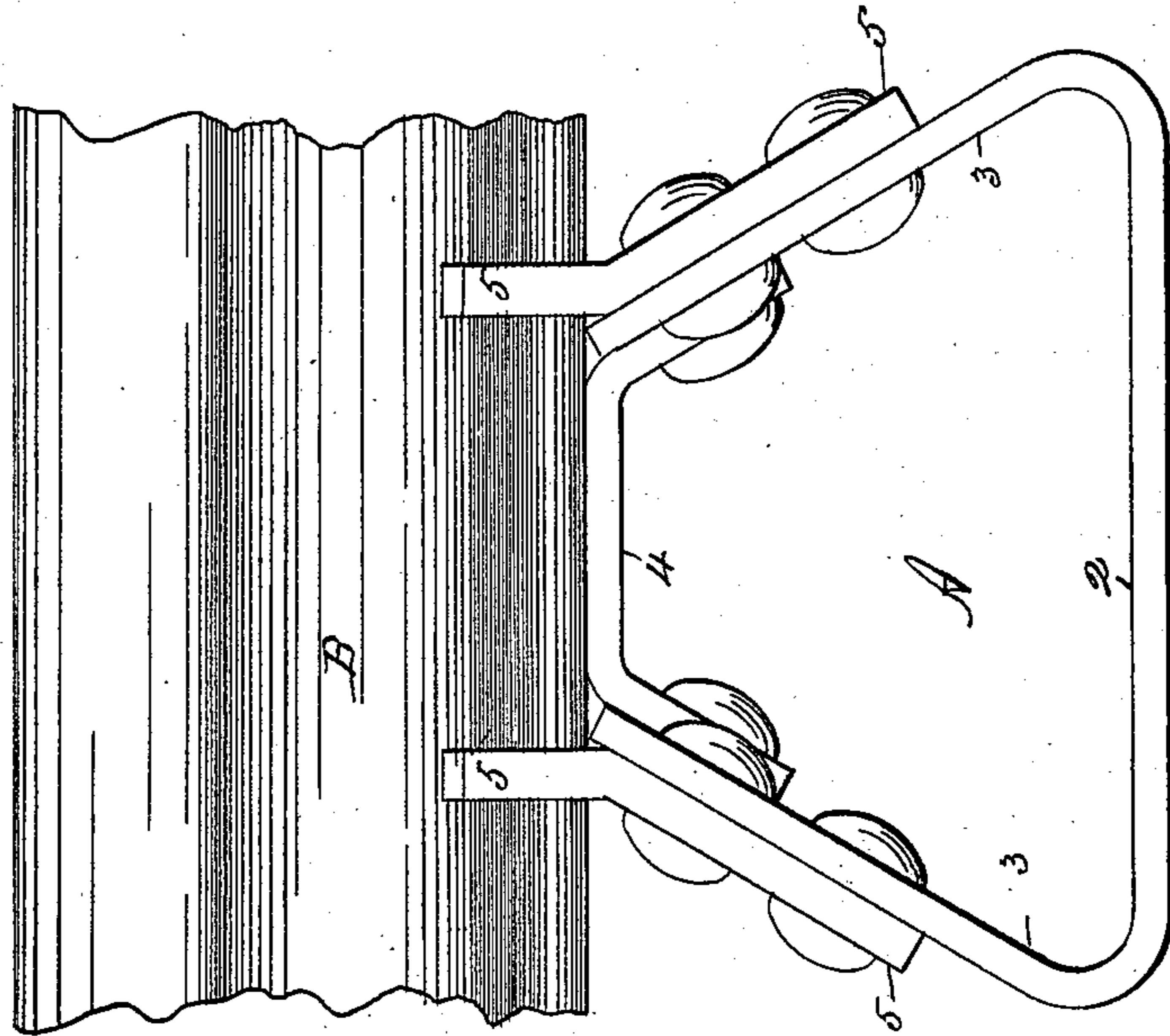
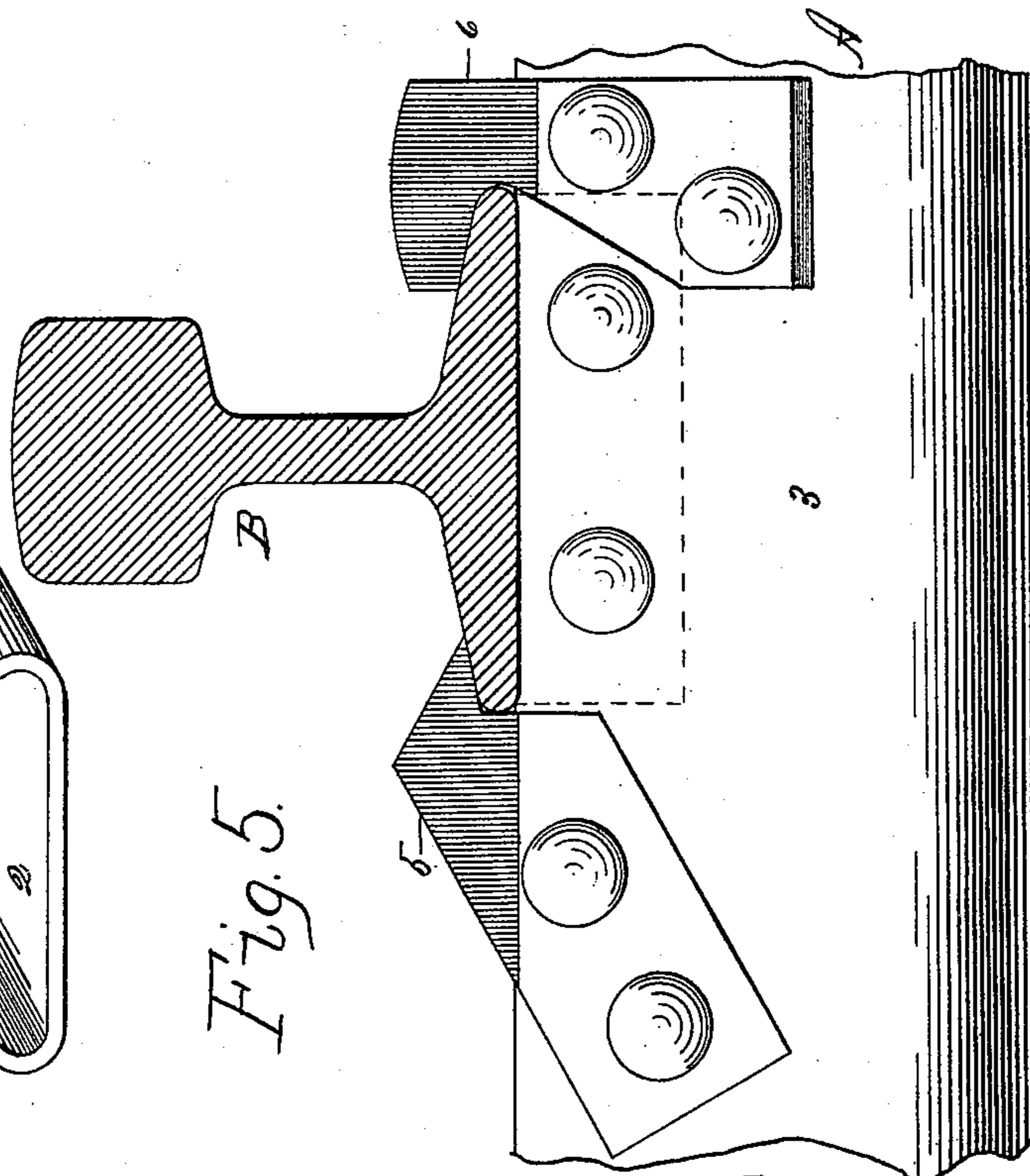


Fig. 5.



Witnesses.
G. M. Chamberlain.
H. M. Bellows

Inventors:
Hiram Taylor
Dwight E. Sherman,
 by *Chapin & Co*
 Attorneys.

UNITED STATES PATENT OFFICE.

HIRAM TAYLOR, OF NORTHAMPTON, AND DWIGHT E. SHERMAN, OF
SPRINGFIELD, MASSACHUSETTS.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 434,213, dated August 12, 1890.

Application filed April 23, 1890. Serial No. 349,184. (No model.)

To all whom it may concern:

Be it known that we, HIRAM TAYLOR, of Northampton, in the county of Hampshire and State of Massachusetts, and DWIGHT E. SHERMAN, of Springfield, in the county of Hampden and State of Massachusetts, citizens of the United States, have invented new and useful Improvements in Metallic Railroad-Ties, of which the following is a specification.

This invention relates to railroad-ties, the object being to provide an improved metallic tie to be used in place of the usual wooden tie; and the invention consists in the peculiar construction of said tie, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a portion of a railroad-tie constructed according to our invention, said figure showing a section of a rail resting on said tie, and rail-securing clips secured to the tie at the side of the rail. Fig. 2 is an end elevation of the tie and a side view of a portion of a rail, and Fig. 3 is a side view of a portion of the tie and an end view of the rail, said two last-named figures illustrating a modified construction of a rail-holding clip hereinafter described. Fig. 4 is a perspective view of a portion of the tie having angle-irons bolted to its opposite sides. Fig. 5 is a side elevation of a portion of the tie, showing a section of the rail resting thereon and clips engaging with the opposite edges of the foot of the rail. Fig. 6 is an end view of the tie, showing a portion of a rail thereon, the bridge-plate under the rail, and clips engaging one edge thereof.

In the drawings, A is the railroad-tie, constructed of a sheet of iron or steel, the latter being preferable, and of about one-fourth of an inch in thickness and of suitable length and width to provide for the construction of the tie A from one piece. The said sheet of metal is of suitable width to provide a base 2 of the tie of about eight inches in width, and sides 3 of about six inches in width above the base, more or less. The sheet of metal from which the said tie A is formed is preferably bent cold to bring the said sides 3 to the inwardly-inclined positions shown in the drawings relative to the base 2 of the tie, whereby

the latter in cross-section is of triangular form. The degree of incline of the sides 3 of the tie is in practice substantially that shown in the drawings, the object being to form said sides 3 of the tie in such lines of incline from their upper edges to the base 2 of the tie that the result of pressure downwardly upon the upper portion of the tie will be to produce a certain amount of tensile strain transversely of the base 2 thereof, whereby the latter is adapted to better resist the effect of said pressure on the tie with less tendency to spring upward through its central portion between its borders, or, in other words, to produce by said pressure upon the inclined sides of the tie an amount of tensile strain upon the base 2 thereof as makes the latter more rigid than it would be were said sides vertical to the base. A bridge-piece 4 is riveted or bolted rigidly between the inclined sides of the tie at the point thereon where the rail B bears, the upper side of said bridge 4 being substantially in the plane of the upper edges of the sides 3, as shown.

Any suitable clips or fastenings may be employed for securing the rail B and the tie A rigidly together, or such as are illustrated in the drawings may be employed, and the latter consist of two clips 6, (see Fig. 5,) one fixed on each side of the tie A in such positions as to lock or engage the inner edge of the base of the rail B. Said clips 6 may be either bolted or riveted to the tie; but ordinarily the latter method is preferable, since said clips 6 are intended to remain permanently in said positions on the tie. The outer edge of the base of the rail may be conveniently secured to the tie by the use of the clips 5, or those of similar construction, which clips may be solidly riveted to the sides of the tie, as shown in Figs. 5 and 6, or they may be bolted to the sides of the tie by bolts and nuts, as shown in Fig. 1; or certain of said clips 5 on a line of railway may be bolted to the tie, as shown in Fig. 1, and others of the line be permanently riveted thereto, as shown in Figs. 5 and 6, as may be preferred.

Another description of clip for securing the outer edge of the base of the rail to the tie, such as is illustrated in Figs. 2 and 3, may, if preferred, be used in place of the clips 5, the

clip 7 (shown in Figs. 2 and 3) being what may be termed a "saddle-clip"—that is, one extending across the upper side of the tie and having pending sides *o* lying upon the outer sides of the tie and bolted thereto, as shown, said clip 7 having a lip *a* thereon extending over the adjoining edge of the base *c* of the rail B.

In laying the within-described railroad-ties in railroad construction the interior of the tie is filled solidly with earth, and such of the ties as are employed at curves in the road are provided with laterally-extending wings 8, as shown in Fig. 4, which engage with the earth on each side of the tie and tend to prevent any endwise or sliding motion of the tie when a train passes over the track. Said wings 8 consist, preferably, of suitable angle-pieces or angle-irons rigidly bolted to the sides of the tie, substantially in the manner shown in said figure.

The within-described metallic railroad-tie is one which can be economically constructed and which possesses features of resistance to the downward pressure of the track which tend to firmness and durability, and the tie is well adapted to have the rails conveniently secured thereto, so that the repairs and interchange of rails on the road-bed provided with said ties can be effected with as much ease as on the road-bed with ordinary wooden ties, and the rails can be much more securely fastened to the description of ties herein shown than to the ordinary tie, and the durability of the within-described metallic tie is ob-

viously much greater than that of wooden ties.

What we claim as our invention is—

1. A hollow sheet-metal railroad-tie having its upper side open and consisting of a base 2 and convergingly-inclined sides 3, combined with two metallic bridge-pieces 4 for each tie extending between the inner surfaces of its upper separated edges at the bearing-points of the rails thereon, the outer sides of said bridge-pieces being substantially in the plane of said upper edges of the sides of the tie and having their ends extending divergingly downward within said sides 3 and rigidly bolted thereto, substantially as set forth.

2. A hollow sheet-metal railroad-tie having its upper side open and consisting of a base 2 and convergingly-inclined sides 3, combined with two metallic bridge-pieces 4 for each tie extending between the inner surfaces of its upper separated edges at the bearing-points of the rails thereon, the outer sides of said bridge-pieces being substantially in the plane of said upper edges of the sides of the tie and having their ends extending divergingly downward within said sides 3 and rigidly bolted thereto, and the rail-clips 5 and 6, secured to the sides of the tie for engagement with a rail laid across said tie, substantially as set forth.

HIRAM TAYLOR.
DWIGHT E. SHERMAN.

Witnesses:

H. A. CHAPIN,
G. M. CHAMBERLAIN.