

Nov. 18, 1924.

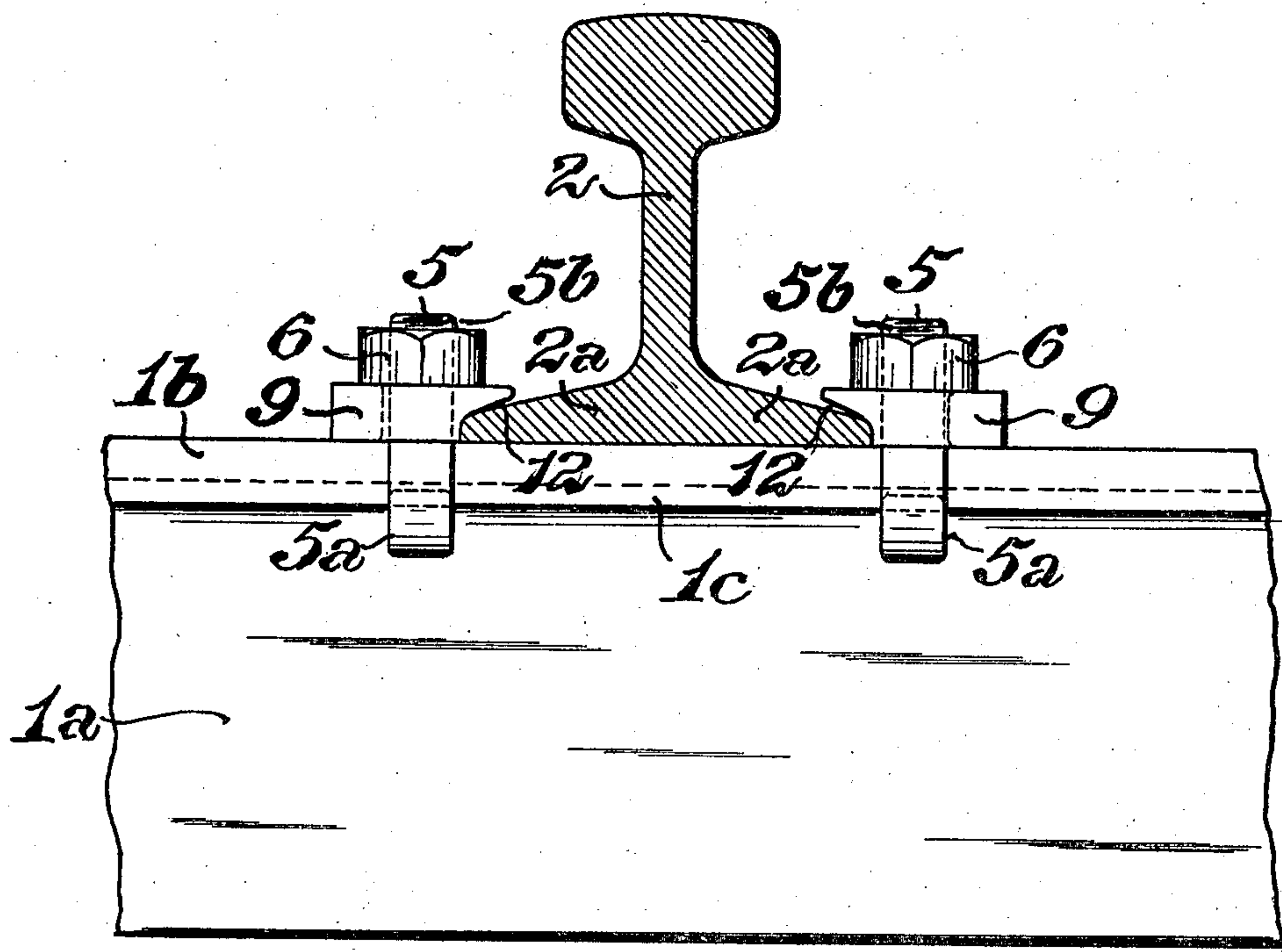
1,516,085

W. DALTON

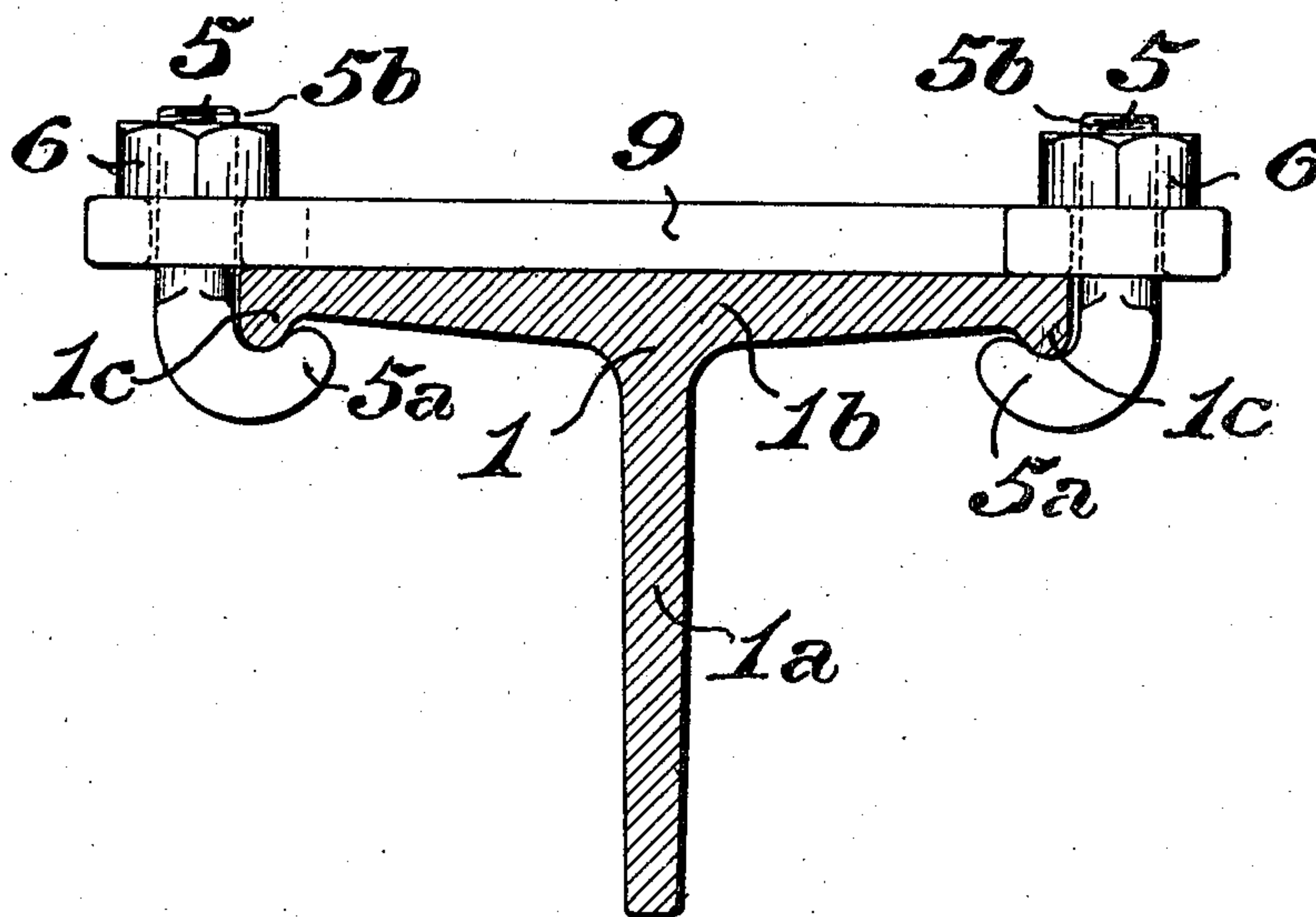
RAIL FASTENER

Filed March 21, 1924

2 Sheets-Sheet 1



- FIG. 1 -



- FIG. 2 -

WITNESSES

A. S. Vanderbilt  
S. R. Bell

INVENTOR

William Dalton  
by Frederick D. Bell  
Att'y

Nov. 18, 1924.

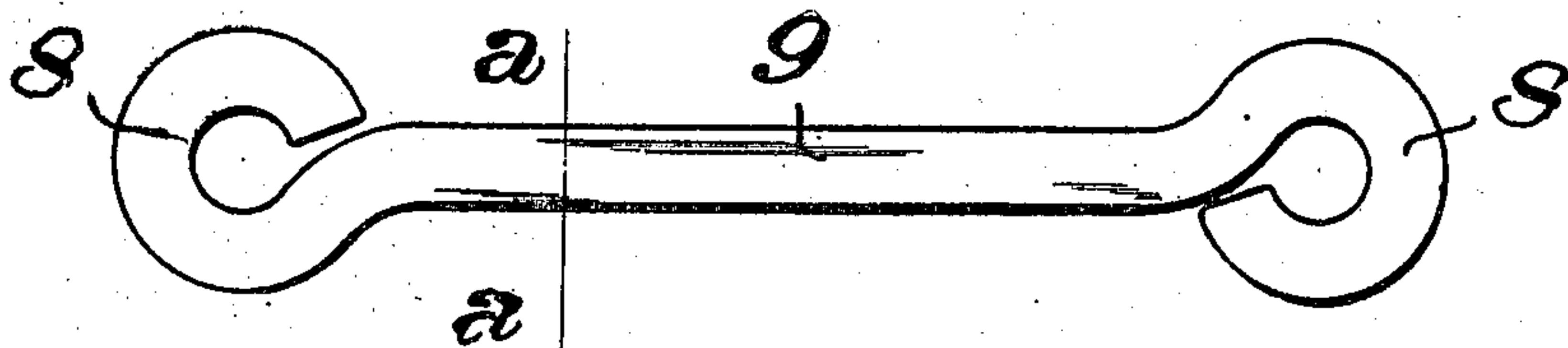
W. DALTON

1,516,085

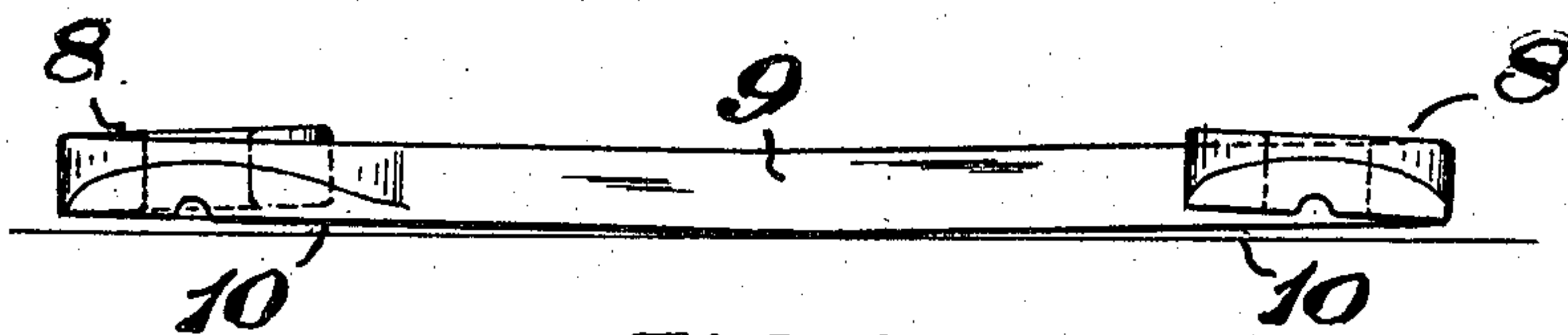
RAIL FASTENER

Filed March 21, 1924

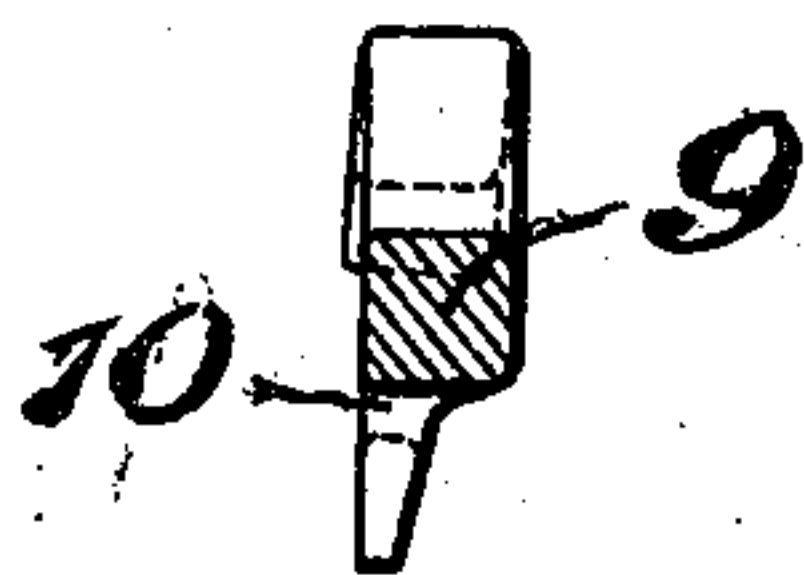
2 Sheets-Sheet 2



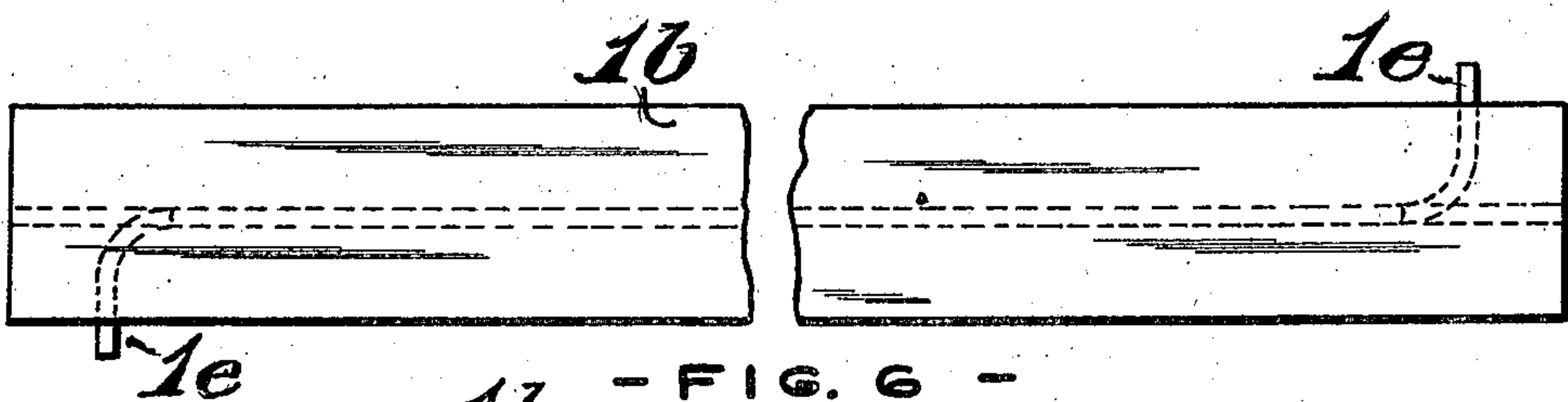
- FIG. 3 -



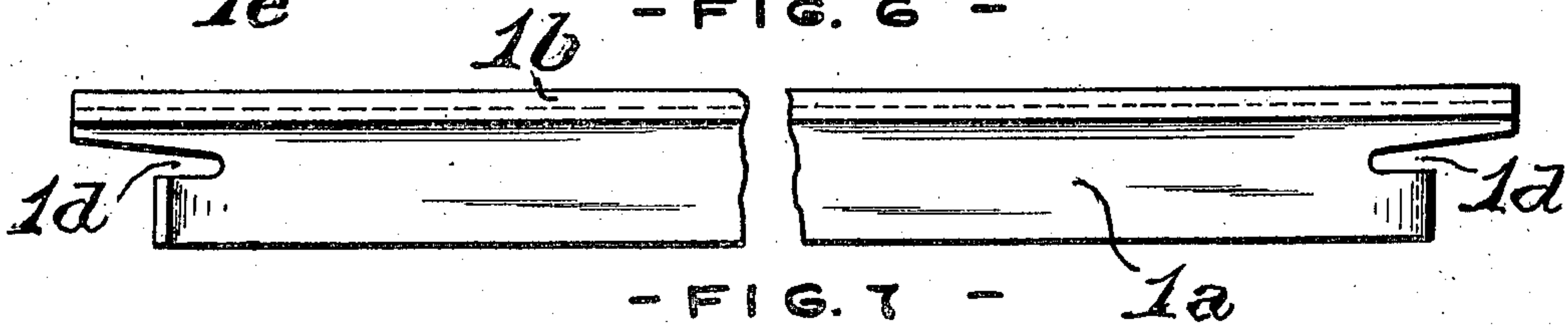
- FIG. 4 -



- FIG. 5 -



- FIG. 6 -



- FIG. 7 -

WITNESSES

A. S. Vanderbilt  
S. R. Bell

INVENTOR

William Dalton  
by Howard Bell  
Atty.



Patented Nov. 18, 1924.

1,516,085

# UNITED STATES PATENT OFFICE.

WILLIAM DALTON, OF SCHENECTADY, NEW YORK.

## RAIL FASTENER.

Application filed March 21, 1924. Serial No. 700,855.

*To all whom it may concern:*

Be it known that I, WILLIAM DALTON, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented a certain new and useful Improvement in Rail Fasteners, of which improvement the following is a specification.

My invention relates to means for securing railroad rails to metal ties, and includes a novel form of tie to be used with the rail securing means. The securing means are in the nature of an improvement upon those set forth in my prior applications, Ser. Nos. 657,944 and 657,945, filed August 17, 1923, of which Ser. No. 657,945 has now become Patent No. 1,503,489, issued August 5, 1924.

One of the objects of my present invention is to reduce the amount of metal in the securing means, while retaining the advantages of the prior devices of my said applications, which are that no cutting or drilling of the tie or rail is required; no more space laterally of the rail is taken up than by the ordinary spikes; and the removal of the rail permitted, with a minimum of labor.

The improvement claimed is hereinafter fully set forth.

An embodiment of the invention is illustrated in the accompanying drawing, in which Figure 1 is a cross section through a rail mounted on the tie; Fig. 2, a cross section through the tie, with the rail securing means in elevation; Fig. 3, a plan view of the retainer bar for the rail; Fig. 4, a side elevation of said bar; Fig. 5, a cross section on the line *a a* of Fig. 3; Fig. 6, a plan view of the tie equipped with anti-creeping means; and, Fig. 7, a side view, in elevation, of the tie of Fig. 6.

In the practice of my invention, referring descriptively to the specific embodiment thereof which is herein exemplified, the tie, 1, is a special rolled bar, of T section, the stem, 1<sup>a</sup>, tapering slightly downward, and the head, 1<sup>b</sup>, being provided with rounded projections or bulges, 1<sup>c</sup>, on the underside of its edges, the purpose of which is to engage with and hold in place the hook-shaped ends, 5<sup>a</sup>, of the securing bolts, 5. These bolts are of square section in their curved hook shaped portions, and of circular section in their straight portions, on which screw threads, 5<sup>b</sup>, are cut for the reception of nuts, 6. The threaded ends pass through eyes, 8, in the ends of the retainer bar, 9, said

eyes being formed by bending around the ends of the bar, in the same way that eye-bolts are formed. In so bending said ends, they are given a slight twist spirally, as indicated by the numeral, 10, in Figs. 4 and 5, which twist gives them a lock washer effect, tending to prevent the nuts, 6, from working loose. Furthermore, the body of the retainer bar is slightly cambered or curved upwardly towards its ends, as also indicated in Fig. 4, so that it will be flattened out when the nuts are tightened up, thereby assisting in holding said nuts in place, and also causing the bar to hug the tie very closely. Obviously, either one of these expedients can be used without the other, if desired. The inner face of the bar is undercut, as indicated by the numeral, 12, to engage over the flange, 2<sup>a</sup>, of the rail, 2. Fig. 1 shows retainer bars and bolts on both sides of the rail, but it will be understood that this is not necessary at every tie, the inner bar being used only at intervals in practice, for example, on every 4th tie. Of course, these inner bars must be removed before the rail can be tipped for removal, but the outer bars do not require to be disturbed.

With a tie of the shape shown and described, there is some danger of its creeping longitudinally in the ballast, at least on curves, and to prevent this, notches, 1<sup>d</sup>, are formed in the ends of the stems of the tie, as shown in Figs. 6 and 7, and laterally extending bends, 1<sup>e</sup>, are formed on the portion below the notches, the bends being preferably in opposite directions, as shown.

It will now be seen that the present invention provides a tie and means to secure rails thereto, in which a minimum of metal is used, and which requires a minimum of labor in insertion and removal. The retainer bar can obviously be used with other forms of ties, such as old rails, for example, and with other forms of bolts, such as those described in my prior applications aforesaid.

I claim as my invention and desire to secure by Letters Patent:

1. Means for securing railroad rails to metal ties, comprising a bar, adapted to engage the rail flange and having eyes in its ends; and short hook-shaped bolts, adapted to pass through said eyes and engage under the edges of the head of the tie.

2. Means for securing railroad rails to



metal ties, comprising a bar, adapted to engage the rail flange and having its ends bent around with a slight spiral twist, to form eyes having a lock washer effect, and bolts, adapted to pass through said eyes to secure the bar to the tie.

3. Means for securing railroad rails to metal ties, comprising a slightly cambered bar, adapted to engage the rail flange and having holes in its ends; and bolts, adapted to engage under a part of the tie, and passing through said holes, whereby said bar can be flattened out and securely clamped to the tie.

4. Means for securing railroad rails to the roadbed, comprising metal ties of T section, having bulges formed along the underside of their flange edges; retainer bars, to engage the rail flanges and having their ends bent spirally to form spring eyes; and hook-shaped bolts, adapted to be passed through said eyes and engaged under and around said bulges.

5. Means for securing railroad rails to metal ties of rolled section, comprising retainer bars, having undercut sides to overlie the rail flanges, and having their ends bent around spirally to form eyes and give a spring lock washer effect; bolts, passed through said eyes and having hook-shaped ends to engage under the flange of the tie; and nuts on said bolts to clamp said bars firmly to the ties.

6. Means for securing rails to metal ties, consisting of bars having their ends bent around to form eyes, and bolts adapted to be passed through said eyes and engaging under the tie.

7. Means for securing rails to metal ties, consisting of bars having their ends bent around to form eyes and having undercut recesses in their inner faces to overlap the rail flanges, and bolts adapted to be passed through said eyes and engaging under the tie.

8. Means for securing rails to metal ties, consisting of bars having their ends bent around to form eyes and having undercut recesses in their inner faces to overlap the rail flanges, the angle of the upper sides of said recesses being greater than that of said flanges, and said bars being slightly cambered, and bolts adapted to be passed through said eyes and engaging under the tie.

9. Means for securing rails to metal ties, consisting of bars having their ends spirally bent around to form eyes with a lock-washer effect, and bolts adapted to be passed through said eyes and engaging under the tie.

WILLIAM DALTON.

Witnesses:

ELIZABETH R. FINEGAN,  
S. H. DINGMAN.