

No. 846,516.

W. C. SMITH.

PATENTED MAR. 12, 1907.

MEANS FOR ATTACHING RAILS TO TIES.

APPLICATION FILED DEC. 21, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

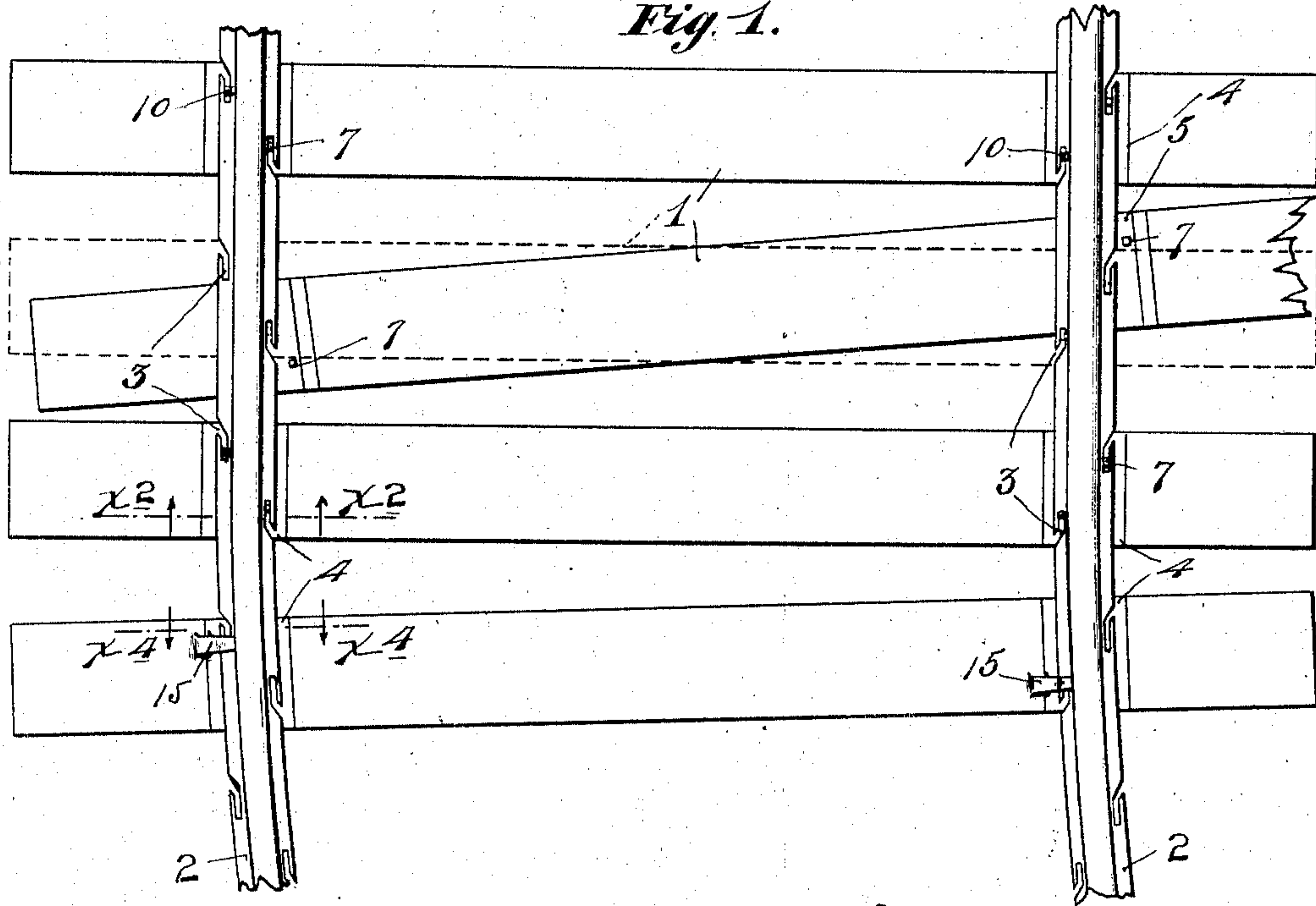


Fig. 2.

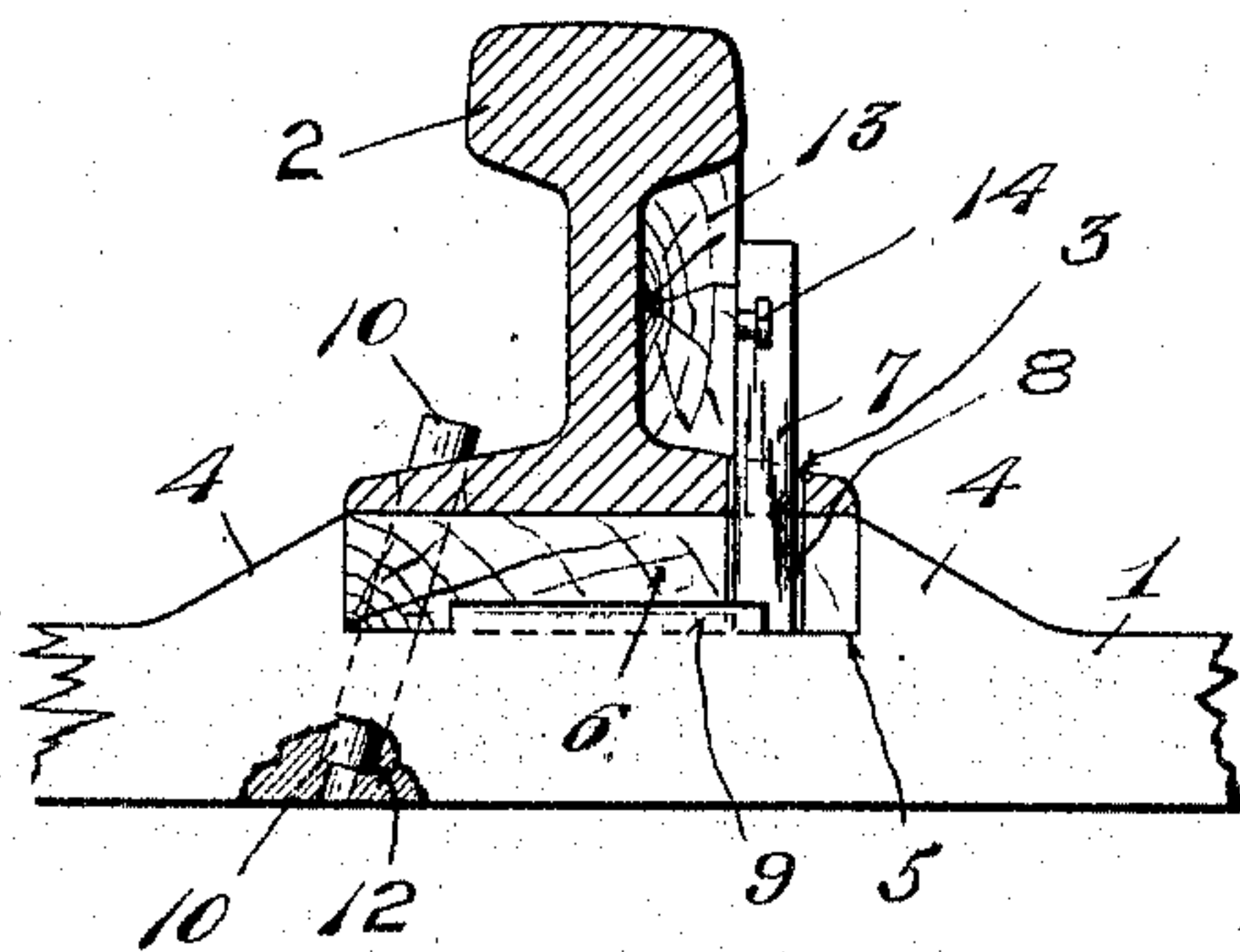
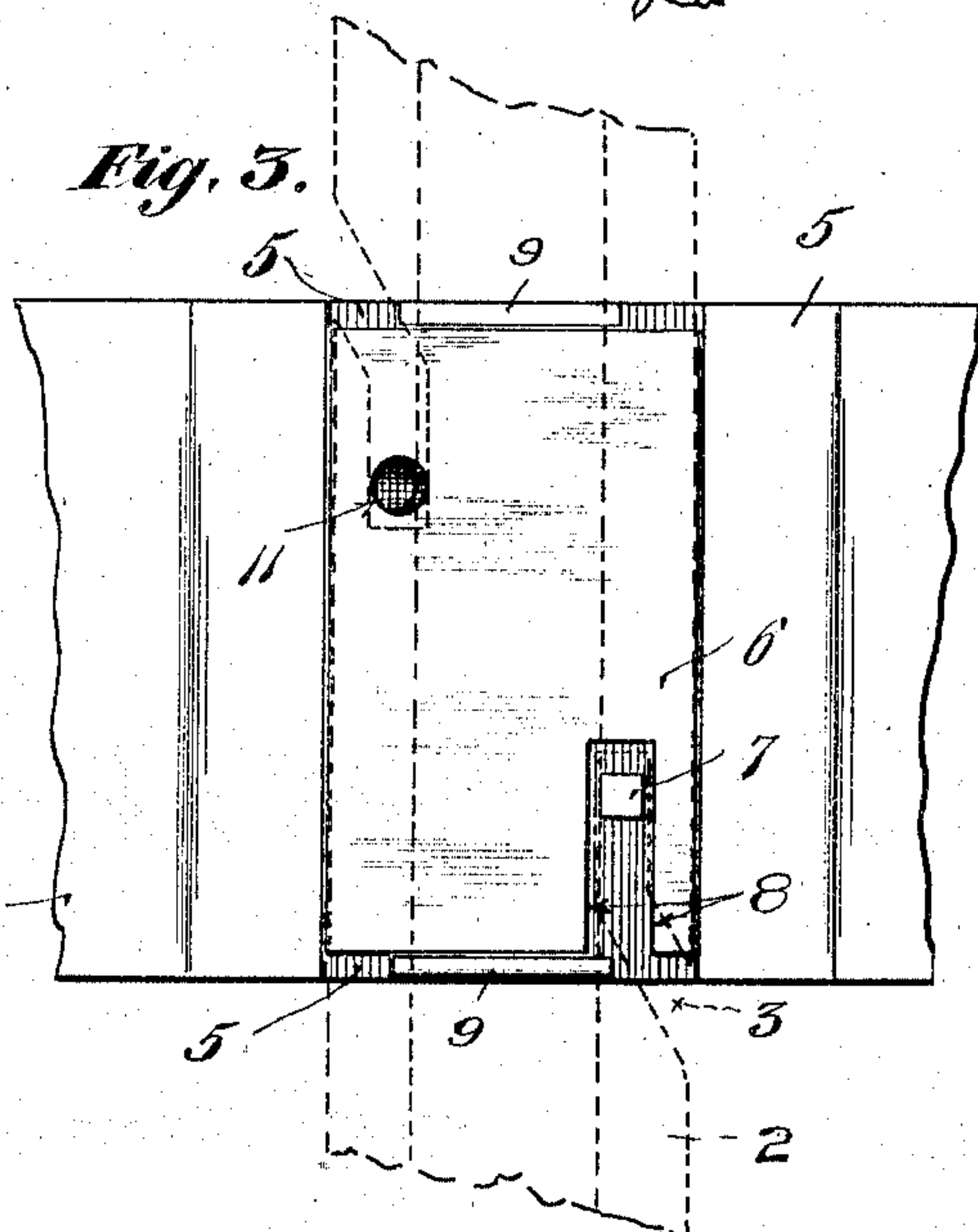


Fig. 3.



Witnesses,

H. Kilgore,

A. H. Opsahl.

Inventor,

William C. Smith,

By his Attorneys,

William M. Mueland

No. 846,516.

PATENTED MAR. 12, 1907.

W. C. SMITH.

MEANS FOR ATTACHING RAILS TO TIES.

APPLICATION FILED DEC. 21, 1906.

2 SHEETS—SHEET 2.

Fig. 4.

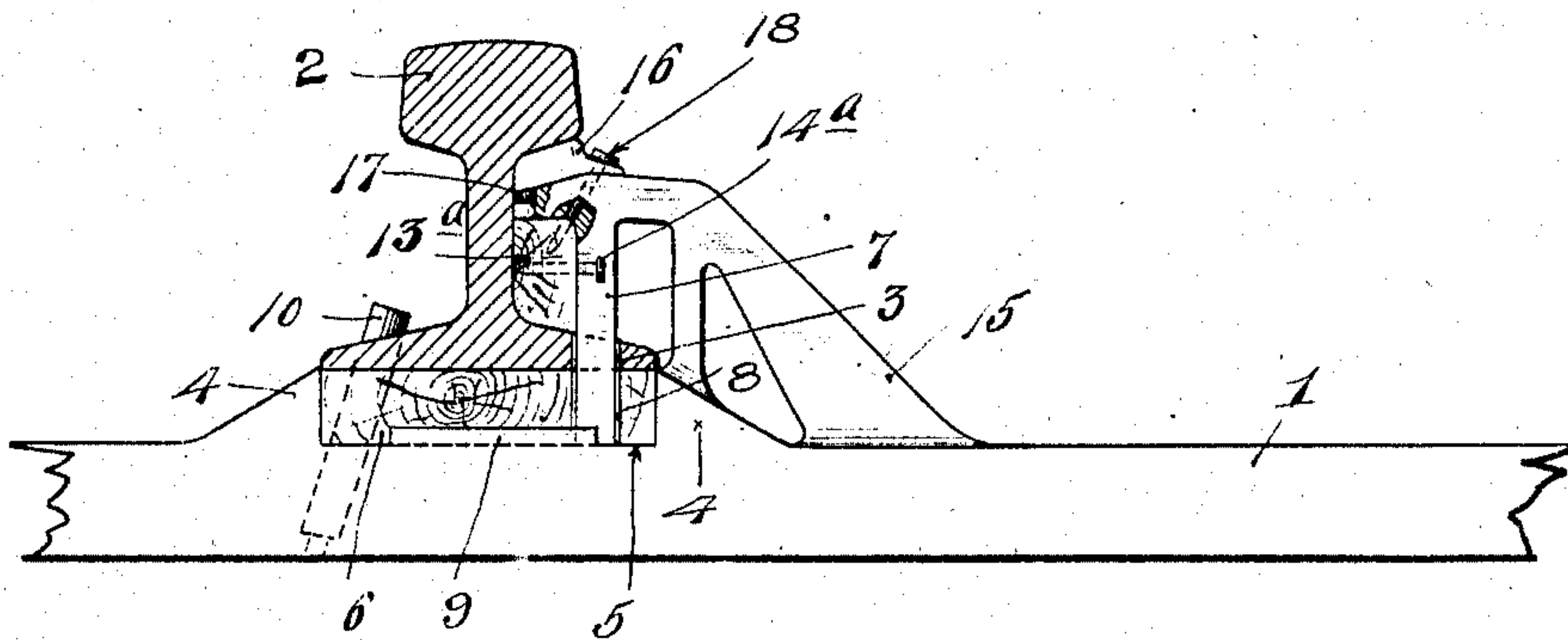
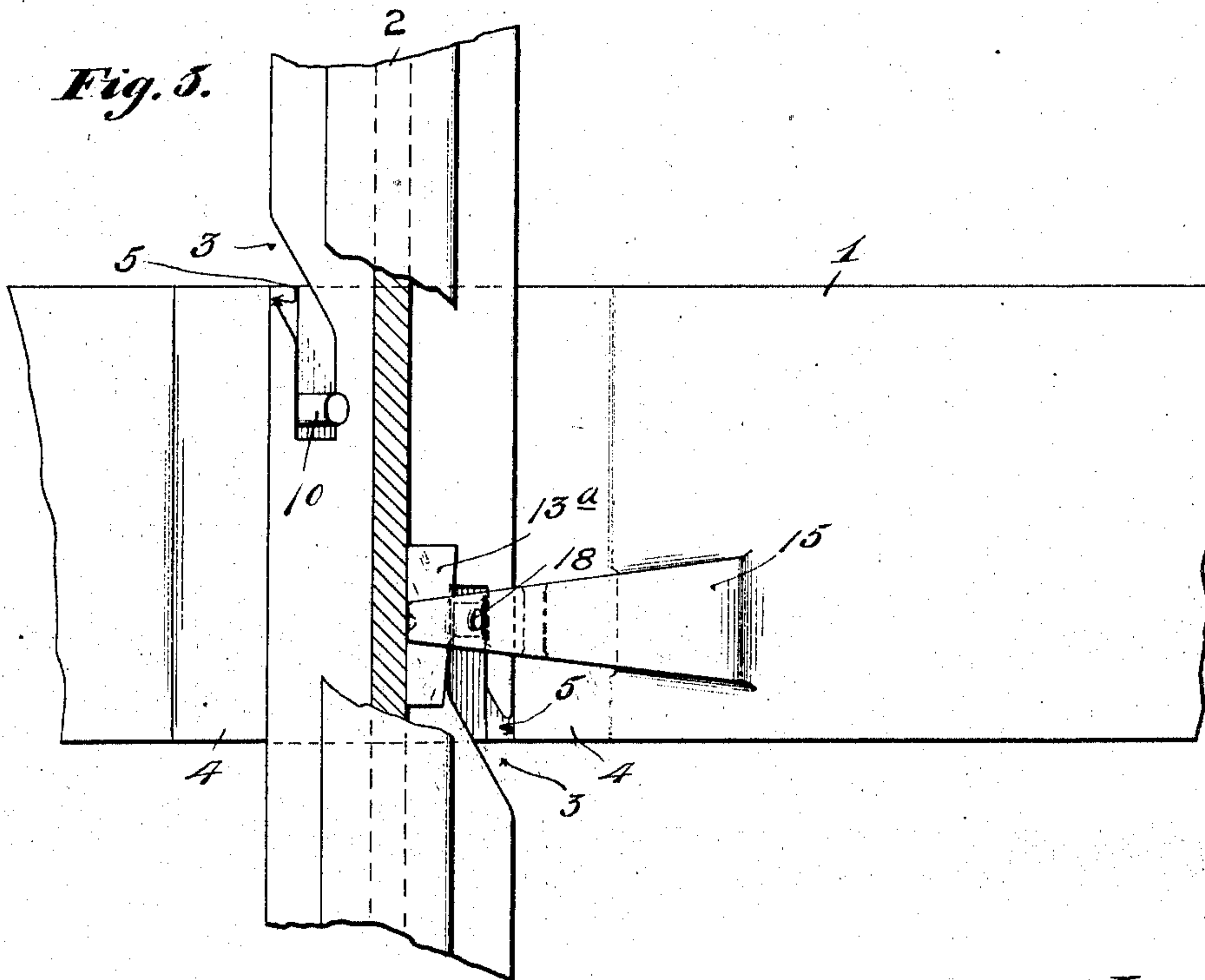


Fig. 5.



Witnesses.

N. A. Kilgore.

A. M. Cpsahl.

Inventor,

William C. Smith.

By his Attorneys,

Williamson Michael

UNITED STATES PATENT OFFICE.

WILLIAM C. SMITH, OF MINNEAPOLIS, MINNESOTA.

MEANS FOR ATTACHING RAILS TO TIES.

No. 846,516.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed December 21, 1906. Serial No. 348,887.

To all whom it may concern:

Be it known that I, WILLIAM C. SMITH, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Means for Attaching Rails to 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.

My invention has for its object to provide an improved means for attaching rails to ties; and to this end it consists of the novel devices and combinations of devices herein-after described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view showing a section of a railway-track and illustrating my improved means for attaching the rails to the ties thereof. Fig. 2 is an enlarged section taken on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a plan view of a portion of one of the ties and shimming-blocks, the rails being indicated by dotted lines. Fig. 4 is an enlarged vertical section taken on the line $x^4 x^4$ of Fig. 1; and Fig. 5 is a plan view, with some parts broken away and some sectioned, showing those portions of one of the rails and one of the ties which are in the vicinity of the section-line $x^4 x^4$ of Fig. 1.

The numeral 1 indicates the ties, and the numeral 2 the rails. The base-flanges of the rails are formed with angular lock-notches 3, that are open at the edges of said flanges. The ties 1 on each side of each rail are formed with raised lugs 4, that afford seats 5, that receive shimming-blocks 6, preferably of wood and upon which the rails directly rest.

Rigidly secured to the ties 2 and projecting upward through the shimming-blocks 6 from the bottoms of the seats 5 are rigid metal posts 7, that extend upward through the angular notches 3 of one of the flanges of each rail. Preferably the shimming-blocks 6 are provided with open notches 8, through which the posts 7 are passed, and the ties 2 at the outer extremities of the seats 5 are formed with stop-flanges 9, that hold the shimming-blocks 6 against endwise movements in said seat. Metal pins 10 are passed through the angular notches 3 in the flanges of the rails, that project reversely to the flanges through

which the posts 7 are passed. These pins 10 are passed through perforations 11 in the shimming-blocks and are tightly driven into seats 12 in the ties 1. The pins 10 are inclined inward at their upper ends, or toward the rails. Wooden spacing-blocks 13 are wedge-shaped and are driven between the posts 7, and the rails and are held against endwise displacement by nails or similar devices 14, driven into the reduced end portions thereof adjacent to the said posts 7. The posts 7, that are located on the outer curves of the rails of the curved track, are formed integral with thrust-resisting brackets 15, which brackets are in turn rigidly secured to or formed integral with the respective ties, as best shown in Figs. 4 and 5.

The spacing-blocks 13^a, that are used in connection with the thrust-brackets 15, are of reduced vertical dimensions, but are tapered and held in position by nails 14^a, substantially as before described. The brackets 15 project over the tops of the spacing-blocks 13^a, and between the upper ends of said brackets and the treads of the rails are interposed metallic spacing-caps 16. These caps 16, as shown, are provided with depending lugs 17, that fit the seats or notches in said brackets 15, and nails 18 are driven through coincident perforations in the said caps 16 and brackets 15 and into the respective spacing-blocks 13^a.

The manner in which the ties with the integrally-formed or rigidly-secured posts 7 may be coupled to the rails is indicated in Fig. 1, wherein one of the ties is indicated both by full and by dotted lines. As is evident, the ties thus coupled and the posts 7 are applied to the respective notches 3 by both endwise and lateral movements of the tie. After the tie has been properly positioned the pins 10 are driven into place, as shown in the drawings and already described.

With this construction shimming-blocks 6 of any desired vertical dimensions may be placed between the ties and rails, so as to level up the rails. Different vertical adjustments of the rails with respect to the ties will also require the substitution of spacing-blocks 13^a and caps 16 of the required dimensions.

What I claim is—

1. The combination with a rail having open notches in its base-flanges, of ties having rigid posts and detachable pins, which

posts are engageable with certain of the notches of said rails by lateral movements, and which pins are driven through flange-notches on the other side of the rail, and co-
5 operating with said posts to secure said rails to said ties with freedom for vertical adjustments, substantially as described.

2. The combination with rails 2 having angular notches 3 in their base-flanges, of
10 ties 1, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties and projecting upward through said shimming-blocks and through certain of the notches of said rails, and pins 10 passed
15 through other notches of said rails, through said shimming-blocks and into seats in the said ties, substantially as described.

3. The combination with rails 2, having angular notches 3 in their base-flanges, of
20 ties 1 underlying said rails, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties and projecting upward through said shimming-blocks and through certain of the notches of said rails,
25 pins 10 passed through other notches of said rails, through said shimming-blocks and into seats in said ties, and spacing-blocks interposed between the upper portions of said

posts 7 and the adjacent faces of the rails, and nails or similar devices driven into said
30 spacing-blocks and engageable with said posts to hold said spacing-blocks against endwise displacement, substantially as described.

4. The combination with rails 2 having
35 angular notches 3 in their base-flanges, of ties 1 underlying said rails, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties and projecting upward through said shimming-blocks and
40 through certain of the notches of said rails, thrust-brackets 15 rigidly secured to said ties and the corresponding posts 7, spacing-blocks 13^a interposed between said posts 7 and said rails, spacing-caps 18 interposed be-
45 tween the upper portion of said bracket 15 and the treads of the rails, and pins 10 passed through certain of the notches 3 of said rails, through said shimming-blocks and into seats
50 in said ties, substantially as described.

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

WILLIAM C. SMITH.

Witnesses:

MALIE HOEL,

F. D. MERCHANT.