

A. R. McDADE.  
TIE FOR RAILS AND BEAMS.  
APPLICATION FILED MAY 19, 1908.

Patented Mar. 9, 1909.  
2 SHEETS—SHEET 1.

914,446.

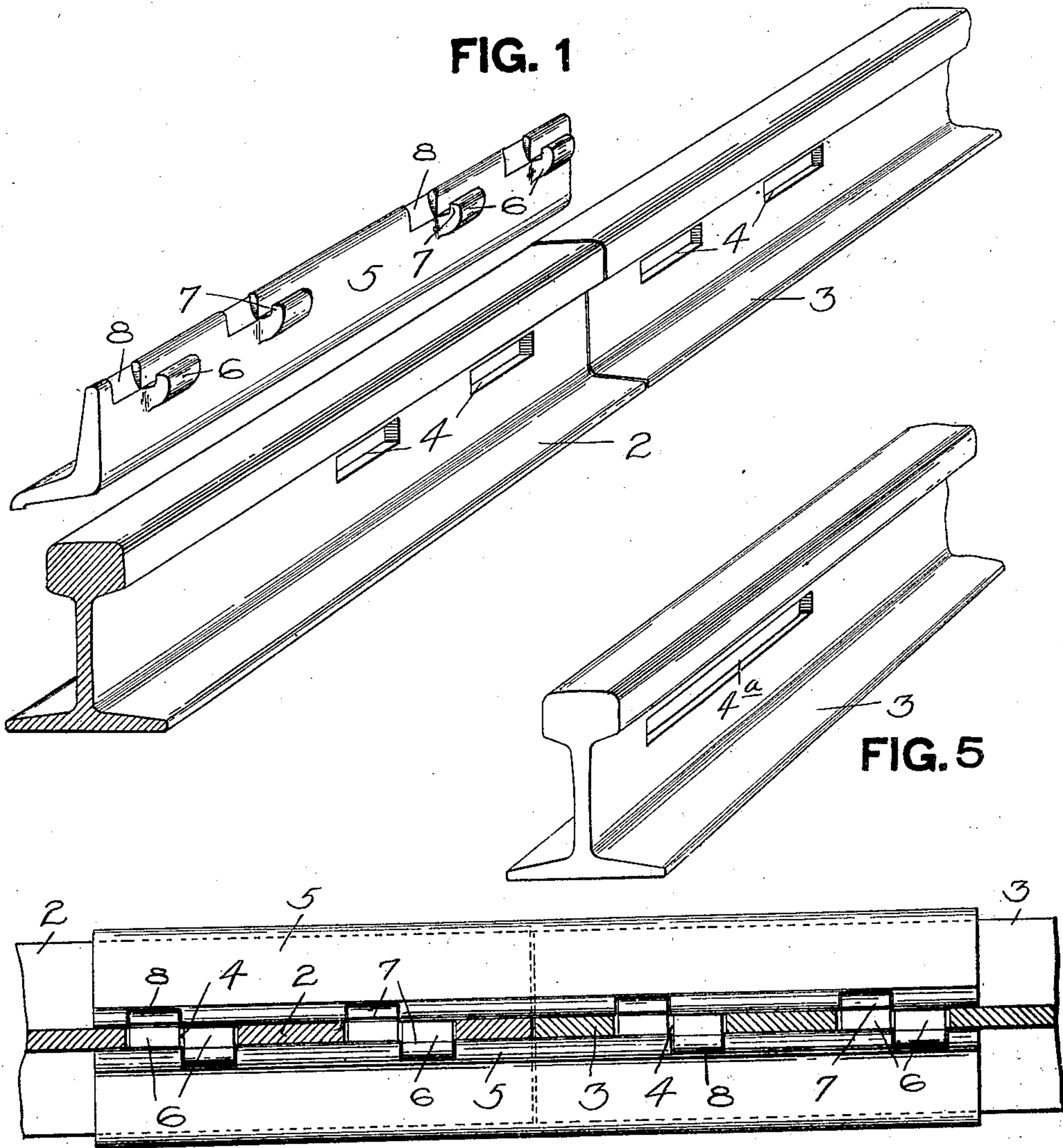


FIG. 2

WITNESSES.

W. Arthur Keller  
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INVENTOR.

Archibald R. McDade  
by James H. Bakewell  
his attorney

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FIG. 3

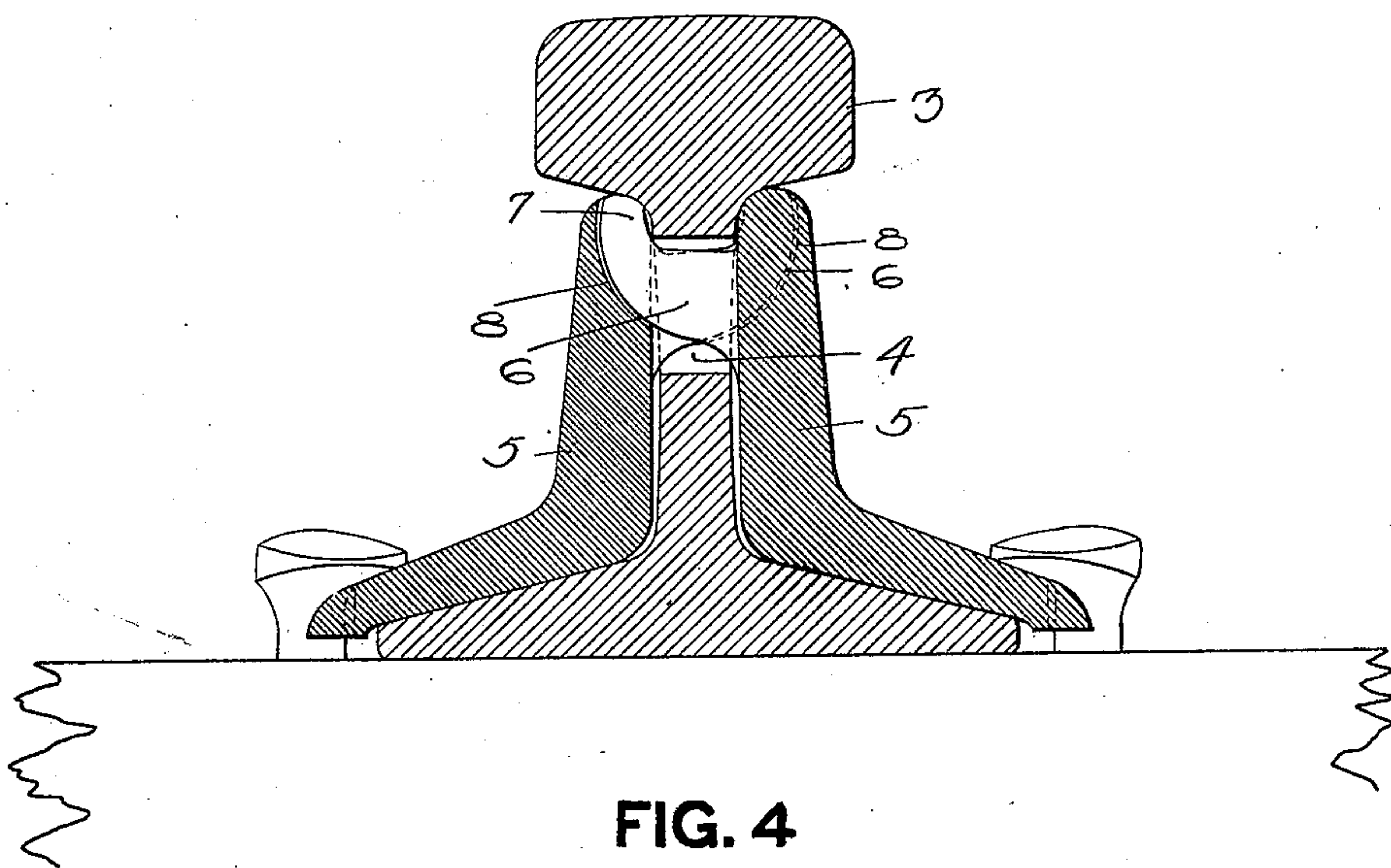
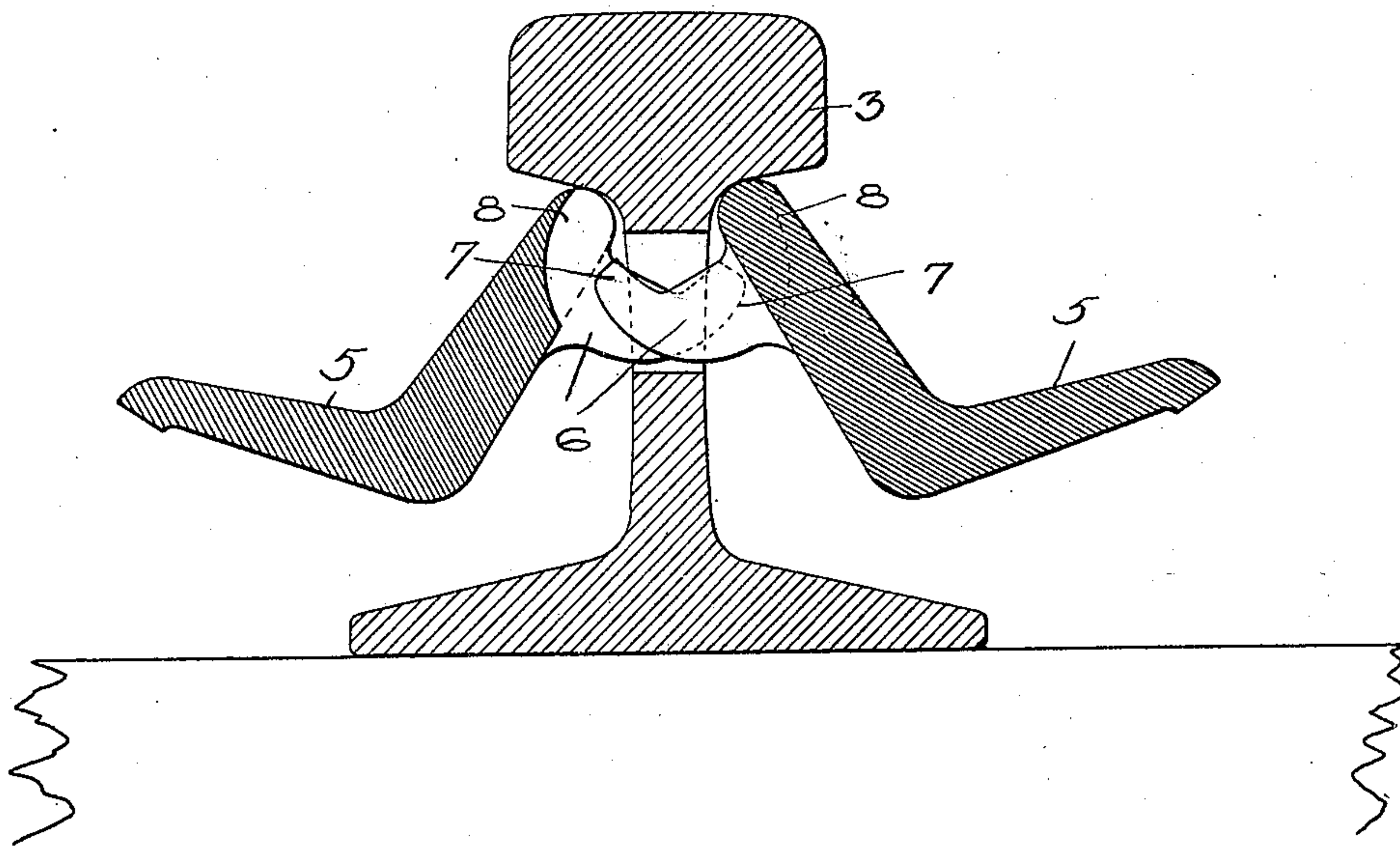


FIG. 4



WITNESSES.

*W. Arthur Keller* —  
*McDade*

INVENTOR.

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# UNITED STATES PATENT OFFICE.

ARCHIBALD R. McDADE, OF VERONA, PENNSYLVANIA.

## TIE FOR RAILS AND BEAMS.

No. 914,446.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed May 19, 1908. Serial No. 433,628.

*To all whom it may concern:*

Be it known that I, ARCHIBALD R. McDADE, of Verona, county of Allegheny, State of Pennsylvania, have invented a certain new and useful Improvement in Ties for Rails and Beams, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to ties for rails and beams and it consists in devices for effectively tying in connecting the meeting ends of rails and beams, its object being to provide a device of this type in which the use of bolts or similar fastening means are dispensed with and which will be simple, strong, and durable and comparatively inexpensive to manufacture. I have shown these devices as applied to railway rails but they may, in a like manner, be applied to beams in structural work.

I will now describe my invention so that others skilled in the art to which it appertains may understand and construct the same, referring to the accompanying drawings in which I have shown my invention as applied to railway rails.

In the accompanying drawings, Figure 1 is a perspective view showing one of the fish-plates and the abutting ends of two rail sections. Fig. 2 is a horizontal sectional view showing the fish-plates applied to the rail sections. Fig. 3 is an enlarged vertical sectional view of the same; Fig. 4 is a similar view showing the manner of applying the fish-plates and Fig. 5 is a perspective view showing a modified form of opening.

In describing my invention, the reference numerals 2 and 3 represent the opposing ends of two rail sections. Formed in the upper portion of the web in each section is a plurality of elongated openings 4, in place of which there may be but one elongated opening 4<sup>a</sup> in each section as shown in Fig. 5. The reference numerals 5 indicate the fish-plates which, in general appearance, are similar to those now employed. These fish-plates are provided with a series of alternately arranged inwardly projecting lugs 6

provided with locking shoulders 7 formed on the upper faces thereof. These lugs 6 are adapted to enter the openings 4 or 4<sup>a</sup>, the shoulder 6 engaging with the webs of the rails on the side opposite to that upon which the fish-plate carrying the respective lugs is applied. The noses or ends of the lugs do not project through the opposite fishplate but are received in suitable recesses 8 formed in the inner face of each fishplate. By elongating the openings 4 the rails are rendered free to move under the expansive and contractive forces due to changes in temperature.

The manner of applying the fishplates to the abutting ends of rails is clearly shown in Fig. 4, wherein the fishplates are shown as swung into an elevated position, the lugs 5 entering the openings 3; while in Fig. 3 the fishplates are shown as swung into locking position, the shoulder 6 of the lugs 5 engaging with the web of the rail, in which position they are locked by spiking the fishplates to the cross ties in the usual manner.

The advantages of my invention will be appreciated by those skilled in the art.

Although I have shown tie members of the general form of railway fish-plates, I do not desire to limit myself thereto, as the form of the tie must correspond with the form of the rails or beams to be united.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

In a tie for rails, the combination with the abutting ends of the rails having a plurality of elongated apertures formed therein adjacent the heads thereof, of fish plates having a series of alternately arranged locking lugs adjacent the top edges thereof and adapted to be swung through the said apertures into engagement with the head and the web of the rail.

In testimony whereof, I have hereunto set my hand.

ARCHIBALD R. McDADE.

Witnesses:

M. A. KELLER,  
M. A. BARTH.