J. W. STEPHENSON.

COMBINED RAIL BRACE AND TIE PLATE.

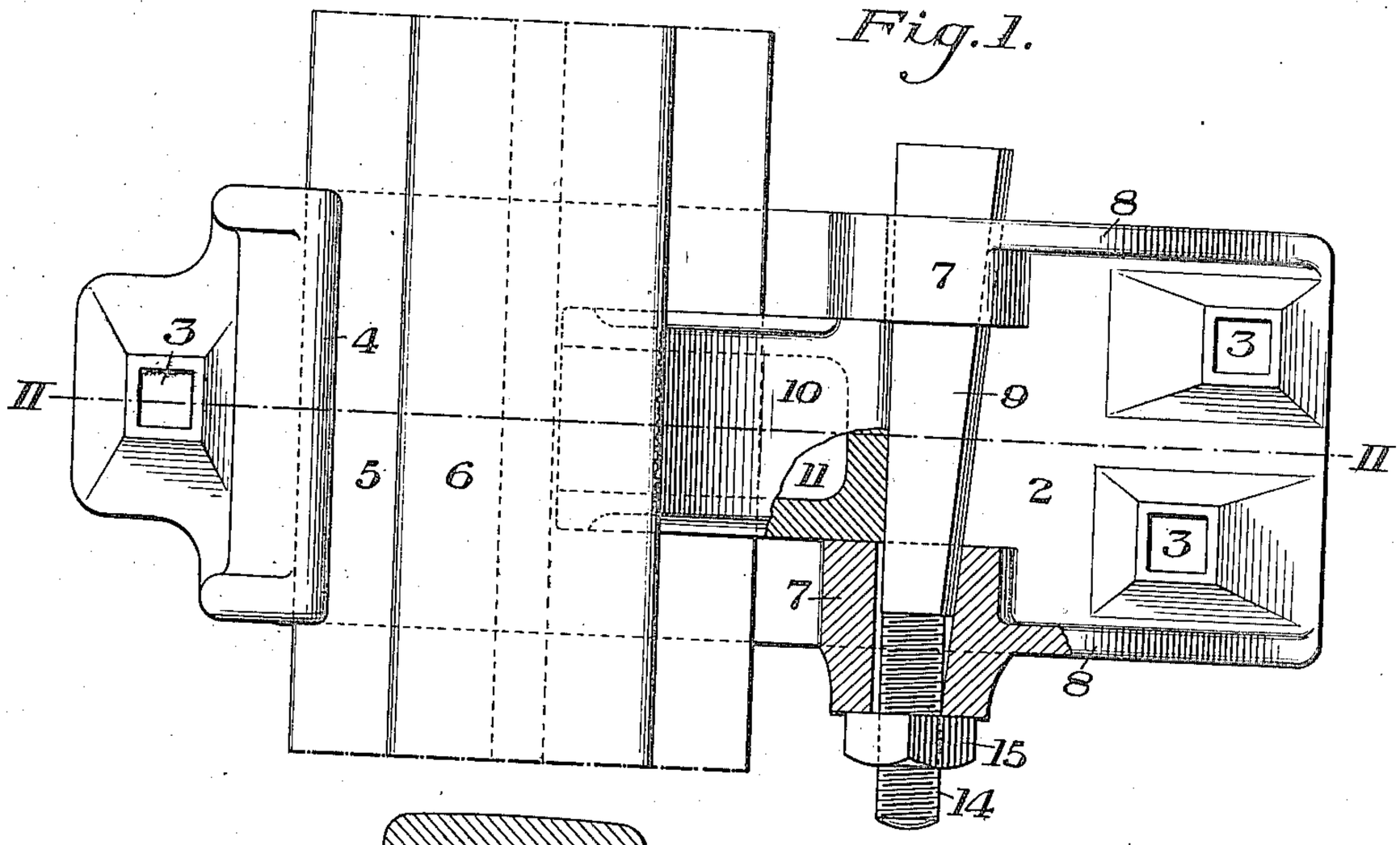
APPLICATION FILED DEC. 7, 1909.

964,325.

Patented July 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



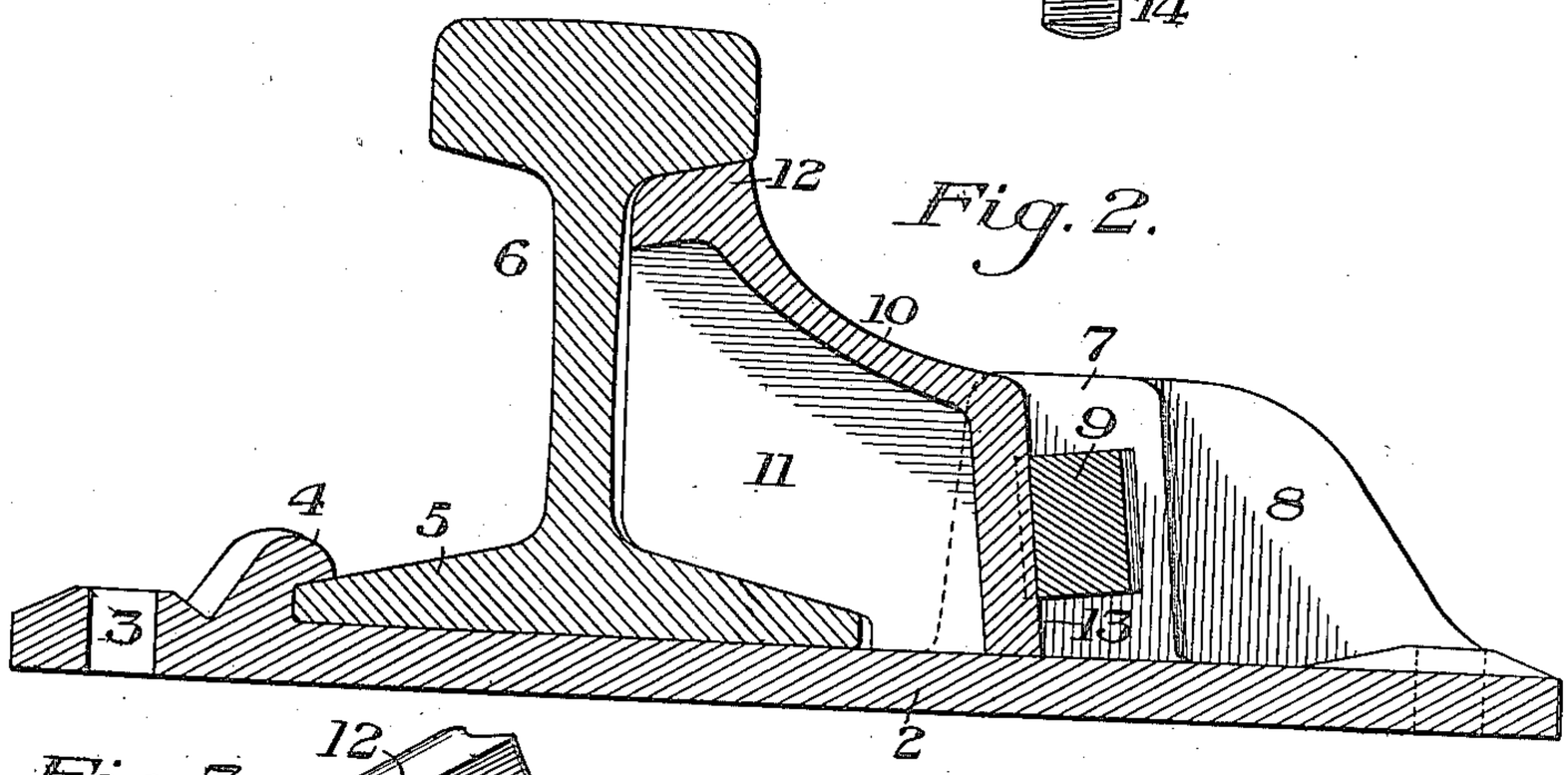


Fig. 2.

Fig. 3.

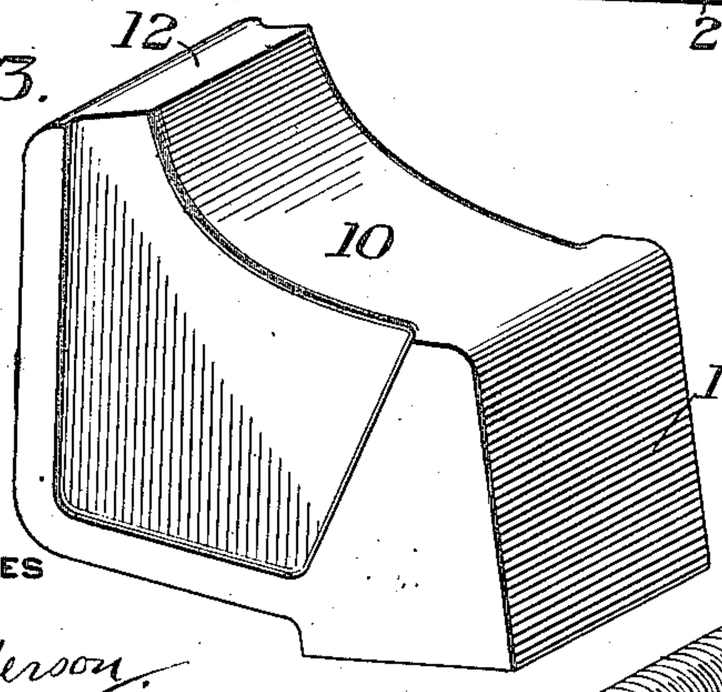
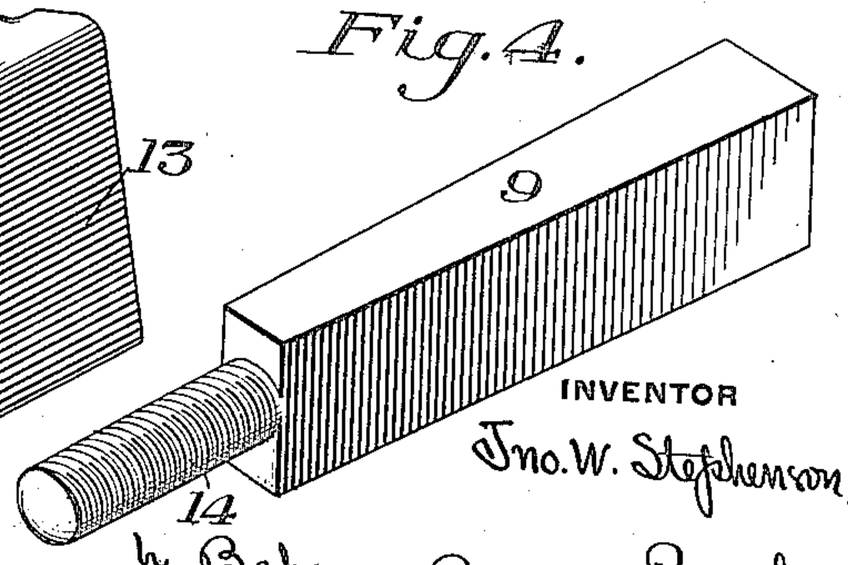


Fig. 4.



WITNESSES

R. A. Balderson.

Walter Famariss

INVENTOR

Jno. W. Stephenson,

by Babcock, Byrnes & Parmelee.

his Attys

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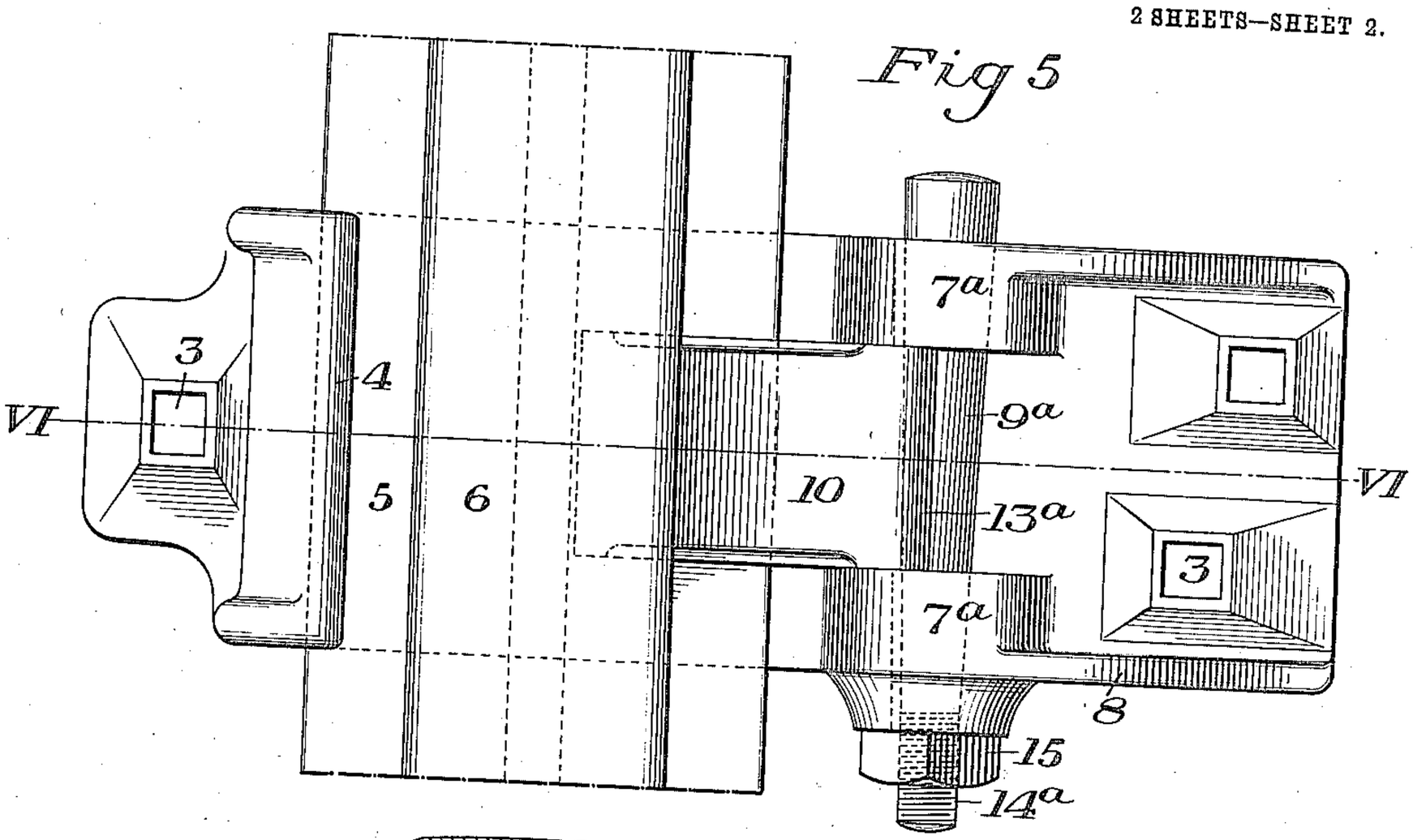
2 SHEETS—SHEET 2.

Fig 5



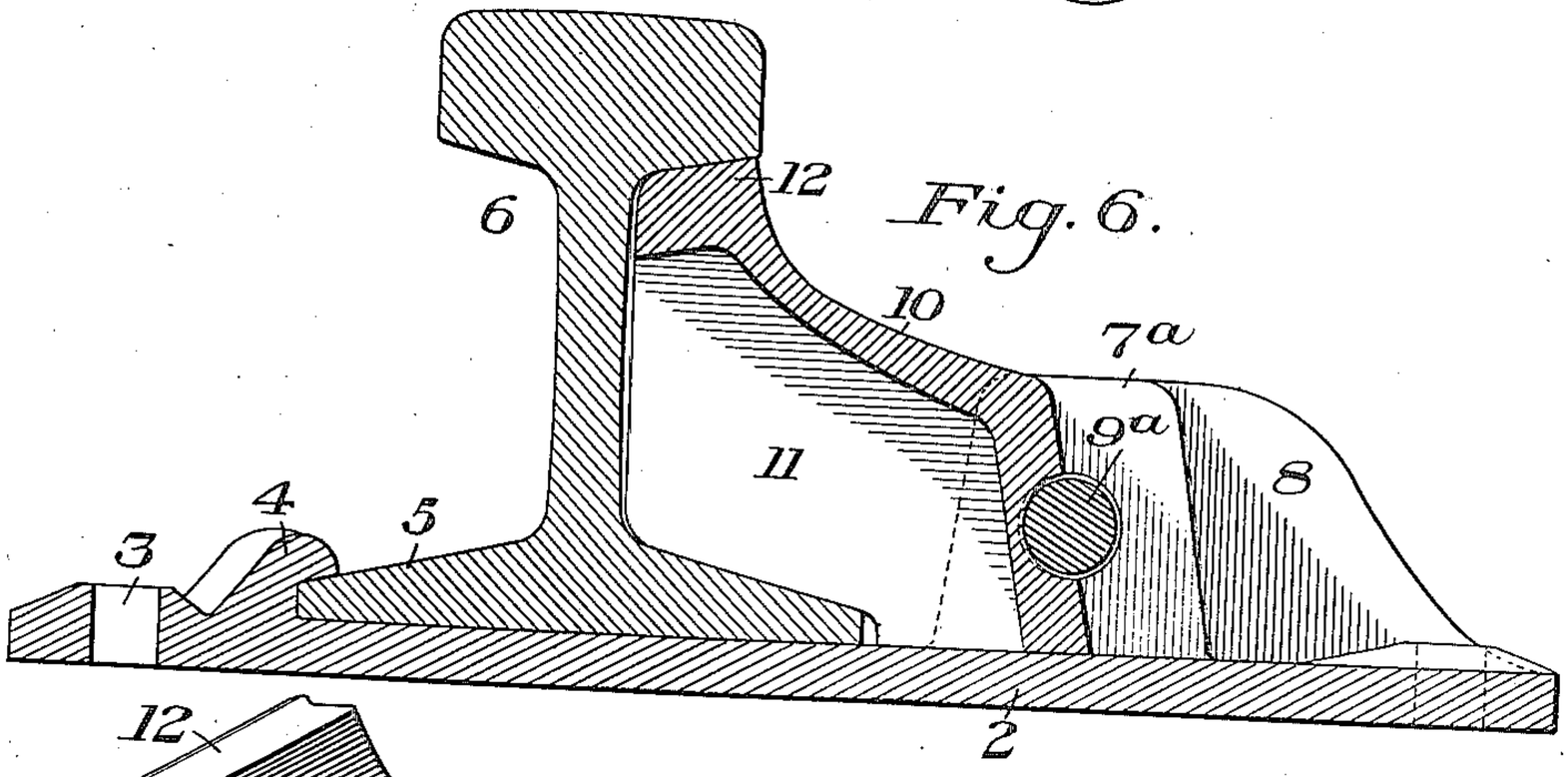


Fig. 6.

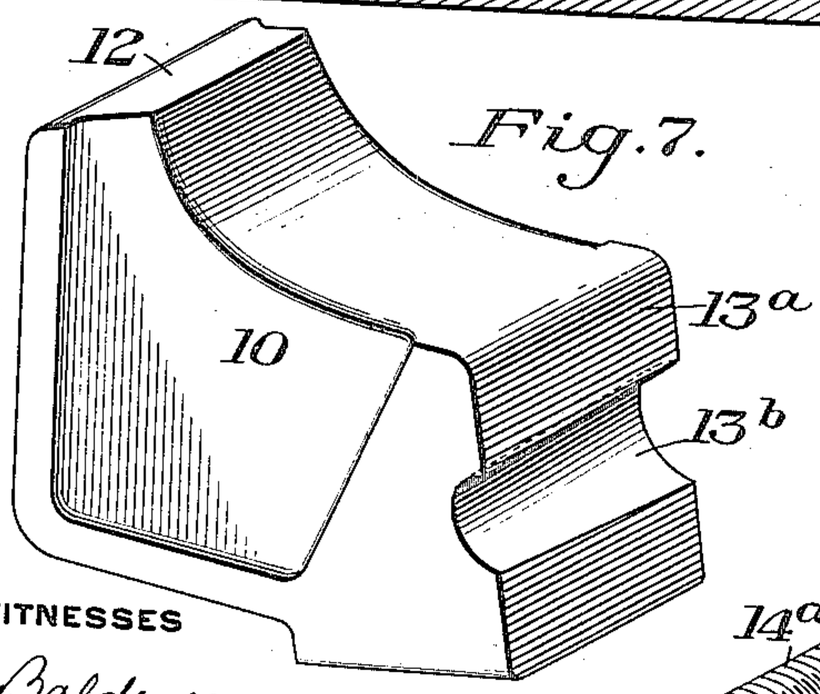


Fig. 7.

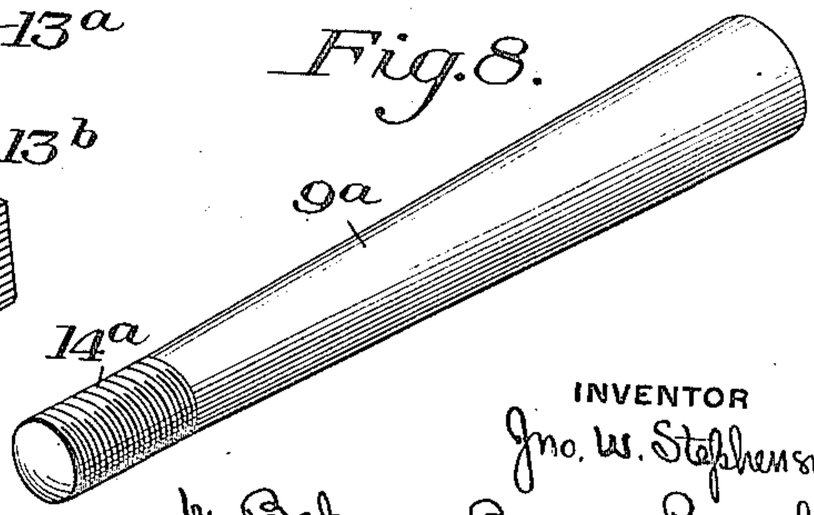


Fig. 8.

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R. A. Balderson.

Walter Famariss

INVENTOR

Jno. W. Stephenson,

by Bakewell, Byrnes & Parmelee.

his Attys.

UNITED STATES PATENT OFFICE.

JOHN W. STEPHENSON, OF TOLEDO, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

COMBINED RAIL-BRACE AND TIE-PLATE.

964,325. Specification of Letters Patent. Patented July 12, 1910.

Application filed December 7, 1909. Serial No. 531,781.

To all whom it may concern:

Be it known that I, JOHN W. STEPHENSON, of Toledo, county of Lucas, and State of Ohio, have invented a new and useful Improvement in Combined Rail-Braces and Tie-Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view partly in section of a rail brace and tie plate embodying my invention, shown applied to a track rail; Fig. 2 is a section on the line II—II of Fig. 1; Fig. 3 is a perspective view of the brace; Fig. 4 is a perspective view of the key; Fig. 5 is a plan view showing a modification; Fig. 6 is a section on the line VI—VI of Fig. 5; and Figs. 7 and 8 are perspective views showing a modified form of the brace and key, respectively.

My invention has relation to combined rail braces and tie plates, and is designed to provide a device of this character which will securely hold the rail against creeping, which will form an efficient brace for the rail, and which will accord a maximum support for the rail head; and also to provide means of novel and efficient character for securing the brace against working or jarring loose.

Referring first to Figs. 1, 2, 3 and 4, the numeral 2 designates the tie plate portion of the device, which is provided with the usual spike holes 3 and with the undercut lip or flange 4, for one edge of the base 5 of the track rail 6. At the opposite side of the rail, the tie plate is formed with the upwardly projecting side lugs 7, which are reinforced by the side webs or braces 8. These lugs are provided with apertures for a tapered key 9.

10 designates the brace, which is preferably a casting hollowed or cored out on its under side, as indicated at 11, and which is provided with a head portion 12, which fits underneath and forms a full support for the head of the rail. The outer lower face 13 of the brace is inclined downwardly and outwardly and forms the seating face for the key, the apertures in the lug 7 for the key being preferably formed with a corresponding incline. A lower outer portion of the brace member is preferably of just about sufficient width to fit snugly between the two side lugs 7.

The smaller end portion of the key is cylindrical in form and is screw-threaded, as shown at 14, to receive a securing nut 15, which may be locked against working loose by means of any suitable nut-locking device.

In applying the device to a rail, the brace member is put in place and the key is then driven tightly to its seat, thus forcing the brace tightly against the rail 6, and underneath the head thereof. The key is then secured by the nut 15.

The brace member together with the tie plate preferably consists of malleable castings.

My invention provides simple and efficient means for securely holding the rails against creeping and for properly bracing and supporting the same. The key 9 can be driven very tightly against the brace member, thus causing the latter to take a firm bearing support underneath the rail head, and when the key is properly driven and secured, it will be impossible for the brace to work loose in service. The key may be tightened up at any time by further driving it to take up any wear of the parts which might occur.

In the form shown in Figs. 5, 6, 7 and 8, the general construction and arrangement of the parts are the same as that above described, except that instead of an angular key, such as shown in Fig. 4, there is employed a tapered cylindrical key 9^a, such as shown in Fig. 8. The face 13^a of the brace member is preferably formed with a cylindrical groove 13^b, to form a seat for this key.

It will be obvious that various changes may be made in the details of construction and arrangement of the parts, without departing from the spirit and scope of my invention, as defined in the appended claims. Thus the shape of the parts may be varied; more than one of the brace members may be employed, and other forms of keys may be used.

I claim:

1. A rail brace comprising a base portion having raised side lugs formed with key openings therethrough, a brace member fitting between said lugs and extending upwardly into supporting engagement with the under side of the rail head, and a key member driven through the openings in said lugs and having a wedging bearing against the brace member, said key member having a threaded portion to engage a securing nut for the key, substantially as described.

2. A combined rail brace and tie plate comprising a tie plate member having a rail-engaging lip or flange at one side of the rail and a pair of upwardly extending lugs at the opposite side of the rail, said lugs having openings therethrough, a brace member seating inwardly and upwardly against one side of the rail, and having a supporting engagement with the under side of the rail head a key driven through said lugs and engaging the brace member and screw bolt mechanism forming a part of the device and arranged to move the key endwise, substantially as described.

3. A combined rail brace and tie plate comprising a tie plate member having a rail-engaging lip or flange at one side of the rail, upwardly extending lugs at the opposite side of the rail, said lugs having inclined key openings therein, a brace member seated between said lugs and having the outer face of its lower portion inclined outwardly and downwardly, and seating upwardly in supporting engagement with the head of the rail a tapered key driven through said lugs and engaging the inclined face of the brace member and a screw bolt mechanism forming a part of the key and engaging the plate arranged to move the key endwise, substantially as described.

4. A combined rail brace and tie plate comprising a tie plate member having a rail-engaging lip or flange at one side of the rail, upwardly extending lugs at the opposite side of the rail, said lugs having inclined key openings therein, a brace member seated between said lugs and having the outer face of its lower portion inclined outwardly and downwardly, and a tapered key driven through said lugs and engaging the inclined face of the brace member, said key having a threaded end portion to receive a securing nut, substantially as described.

5. In a combined rail brace and tie plate, the combination with a tie plate member having raised side lugs, of a brace member arranged to fit between the lugs and the rail and seating upwardly into supporting engagement with the head of the rail, said lugs having inclined openings, a tapered key arranged to fit in the openings, and screw bolt mechanism engaging the tie plate and arranged to move the tapered key downwardly and inwardly; substantially as described.

6. A combined rail brace and tie plate, comprising a tie plate member having upwardly projecting side lugs with openings in alinement, a brace member fitting between the lugs and the rail and arranged to seat upwardly against the head of the rail, and a tapered key having screw bolt mechanism and arranged to fit in the apertures of the lugs and against the brace member; substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN W. STEPHENSON.

Witnesses:
J. J. MANNING,
MARK KUEHN.