

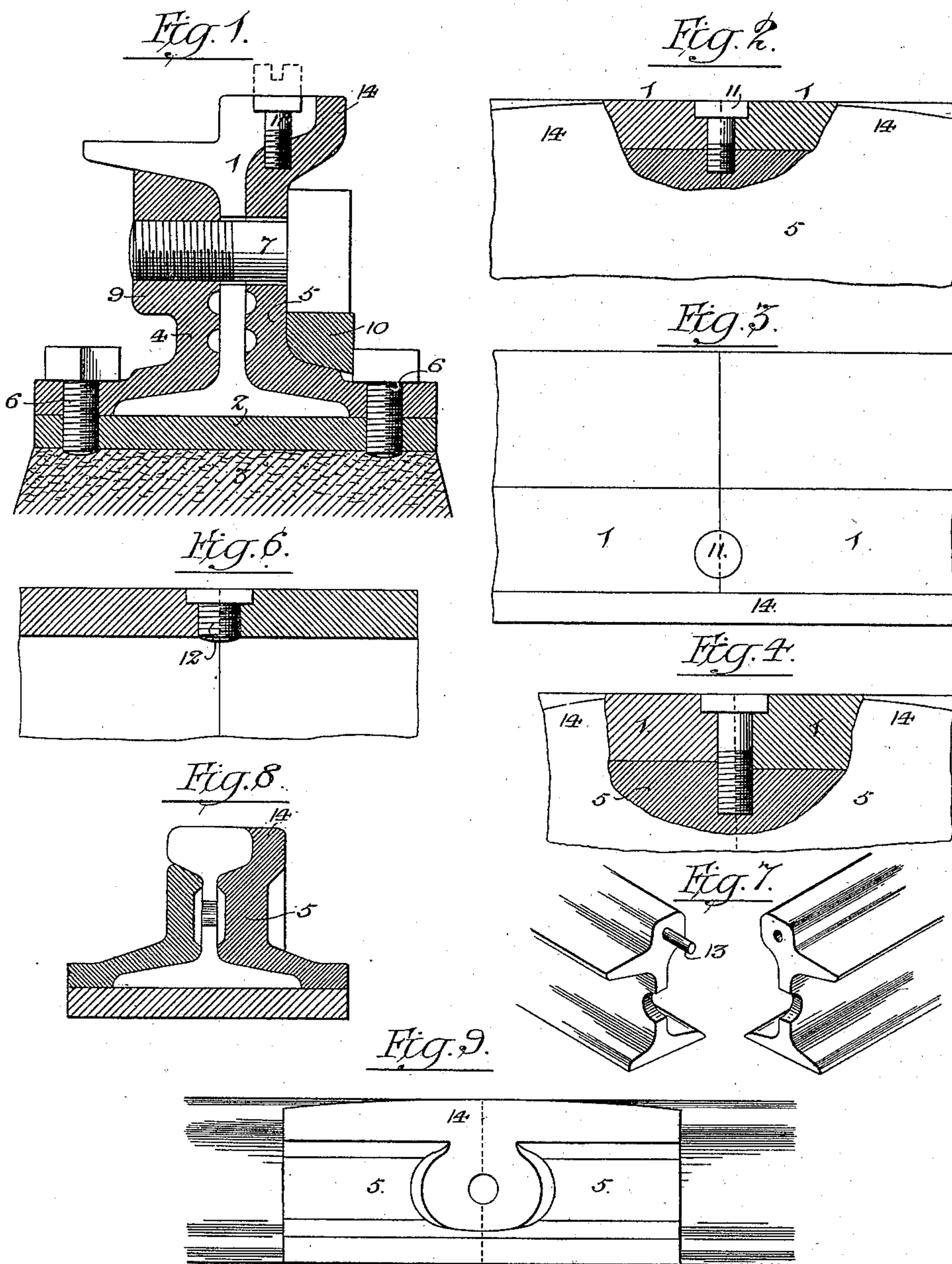
No. 625,676.

Patented May 23, 1899.

P. HEVNER, Dec'd.  
A. V. HEVNER, Executrix.  
RAILWAY RAIL JOINT.

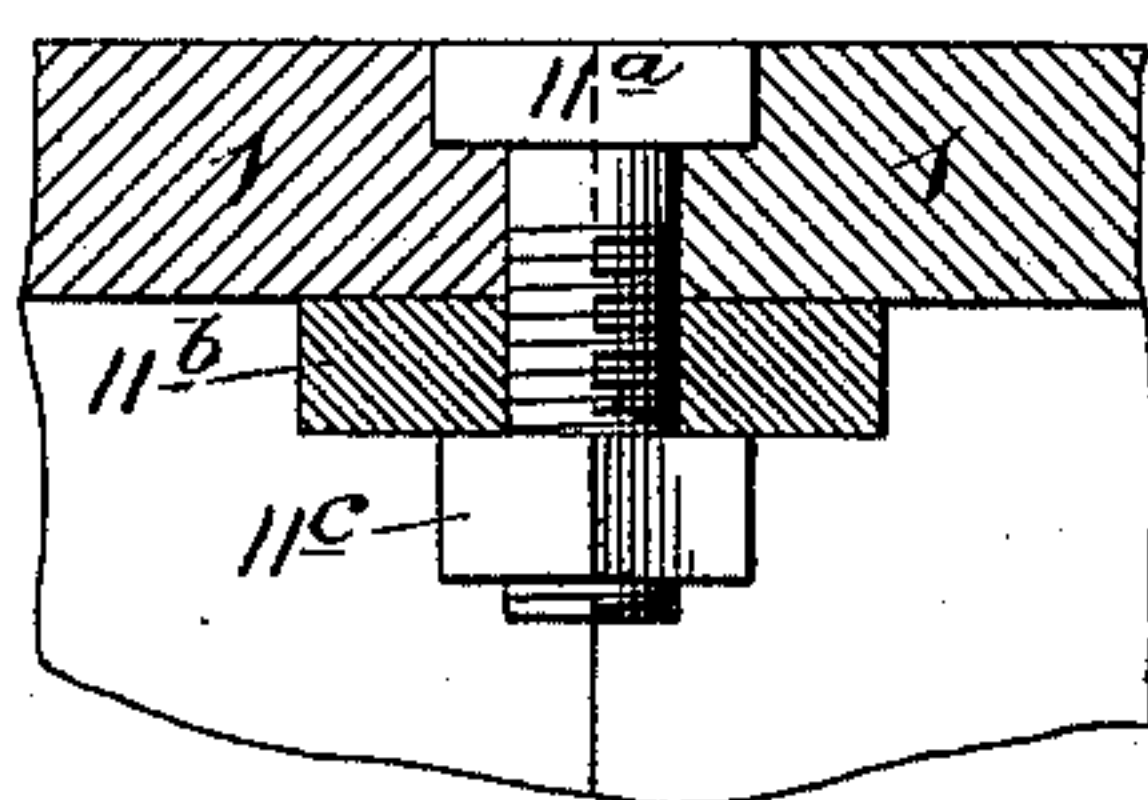
(Application filed July 5, 1898.)

(No Model.)



Witnesses:-  
Frank H. Graham.  
Lewis M. Whitehead.

Fig. 5.



Inventor:-  
Peter Hevner.  
by his Attorneys.

Howson & Howson



# UNITED STATES PATENT OFFICE.

PETER HEVNER, OF PHILADELPHIA, PENNSYLVANIA; ANN VIRGINIA HEVNER EXECUTRIX OF SAID PETER HEVNER, DECEASED.

## RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 625,676, dated May 23, 1899.

Application filed July 5, 1898. Serial No. 685,144. (No model.)

*To all whom it may concern:*

Be it known that I, PETER HEVNER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Railway-Rail Joints, of which the following is a specification.

One object of my invention is to provide a secure fastening for the joints of railroad-rails without the use of the objectionable nuts  
10 now generally employed, a further object being to secure the rails together without restricting their expansion and contraction, a still further object being to maintain the  
15 tops of the abutting rails at the joint at the same level and to prevent any lateral displacement of the rails at the joint, and a final object being to provide a support independent of the rails for wheels passing over the  
20 joints, whereby the hammering action due to the transfer of weight from the extreme end of one rail to the extreme end of the abutting rail is prevented.

In the accompanying drawings, Figure 1 is a transverse section of a girder-rail joint constructed in accordance with my invention.  
25 Fig. 2 is a longitudinal section of part of the same. Fig. 3 is a plan or top view of the meeting ends of the rails. Figs. 4, 5, 6, and 7 are views illustrating other methods of carrying out my invention, and Figs. 8 and 9  
30 are respectively a transverse section and a side view illustrating the application of my invention to an ordinary T-rail.

An ordinary girder-rail is represented at 1  
35 in the drawings, the base of this rail resting upon a plate 2, which is secured to a pier or girder 3, of artificial stone or concrete, opposite fish-plates 4 and 5, having base portions overlapping the base-flanges of the rail and  
40 secured to the plate 2 by means of bolts or screws 6. The stem of a bolt 7 passes freely through an opening in the fish-plate 5 and through recesses in the abutting ends of the webs of the rails 1; but the threaded portion  
45 of this bolt is adapted to a threaded opening formed in a boss or enlargement 9 on the fish-plate 4, so that on screwing up said bolt 7 the two fish-plates will be firmly clamped upon the rails without the aid of the usual  
50 independent nut. When the bolt 7 is screwed up tight, it may be locked in position by

means of a block 10, inserted between the bottom of the bolt or screw-head and the upper face of the base-flange of the fish-plate 5, the outer portion of this block also bearing on and serving to lock one of the securing bolts or screws 6. 55

As the bolt 7 passes through recesses in the abutting ends of the webs of the rails, it does not restrict or interfere with the expansion  
60 or contraction of the rails under the influence of temperature changes.

At the joint between the two rails 1 each of the abutting ends of the rails also has formed in it a semicircular recess counter-  
65 sunk at the top for the reception of a bolt 11, having an enlarged head adapted to the countersunk portions of said openings and a threaded stem adapted to a threaded opening in the upper portion of the fish-plate 5, whereby the tread portions of the rails are  
70 firmly confined vertically to said fish-plate, and the upper faces of said rail-treads are maintained at the same level, so that wheels will pass over the joints smoothly and without  
75 objectionable shock or jar either to wheel or rail, the head of the bolt 11 also serving in a measure to bridge the joint between the rails, and thus carry the wheel over the same  
80 without hammering.

Where the tread portions of the abutting rails differ in thickness, the bearing portion of the fish-plate should be shaped to correspond with the under sides of said treads, as shown, for instance, in Fig. 4, so that the  
85 proper support for the meeting ends of both rails is afforded, while the tops of the treads are always held rigidly at the same level, and instead of screwing into a fish-plate a bolt—such, for instance, as shown at 11<sup>a</sup>, Fig. 5—  
90 may pass through a washer 11<sup>b</sup> beneath the rail-treads and screw into a nut 11<sup>c</sup> beneath said washer; or, if desired, the recesses in the ends of the rails may be threaded and a bolt  
95 12 screwed directly into the threaded opening thus formed, as shown in Fig. 6, so as to bring the tops of the treads of the two rails to the same level and hold them there.

The vertical bolts 11 and 12 at the joints of the rails serve as dowel-pins to prevent either  
100 vertical or lateral movement of one rail independently of the other, and, if desired, this



feature of my invention may be carried out by the use of longitudinal dowel-pins adapted to openings in the ends of the rails, as shown, for instance, at 13 in Fig. 7.

5 The upper portion of the fish-plate 5 is carried up outside of the tread of the rail, so as to form a rib 14, which at the joint between the two rails is flush with the tops of the rails, the top of the rib being, however, by preference  
10 once beveled or rounded from the center toward each end, so that the projecting tread of a wheel running along the rails 1 will as said wheel approaches the joint between the two rails come in contact with the upper surface of the rib 14, whereby the latter will  
15 serve to support the weight of the wheel and its load as the latter is passing over the joint, thereby providing an additional means of preventing the destructive hammering of the  
20 rails and wheels due to the sudden transfer of the load from the end of one rail to the end of the rail adjoining it. In Figs. 8 and 9 this feature of my invention is illustrated in connection with a fish-plate for ordinary T-rails,  
25 the function of the rib 14 being the same in either case.

Having thus described my invention, I

claim and desire to secure by Letters Patent—

1. The combination of adjoining railroad- 30 rails having recesses in the meeting ends of the webs, fish-plates flanking said webs, and a clamping-bolt securing the fish-plates together and passing through the opening formed by the recesses in the meeting ends 35 of the webs of the rails, substantially as specified.

2. The combination of the meeting ends of a pair of rails, with a vertical bolt passing down through the joint and having an enlarged head adapted to countersunk recesses 40 in the ends of the rails, and a threaded stem engaging with a threaded opening in a retainer below the heads of the rails, said retainer also presenting a bearing for the under side of the 45 rail-heads on each side of the joint, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER HEVNER.

Witnesses:

F. E. BECHTOLD,  
JOS. H. KLEIN.