

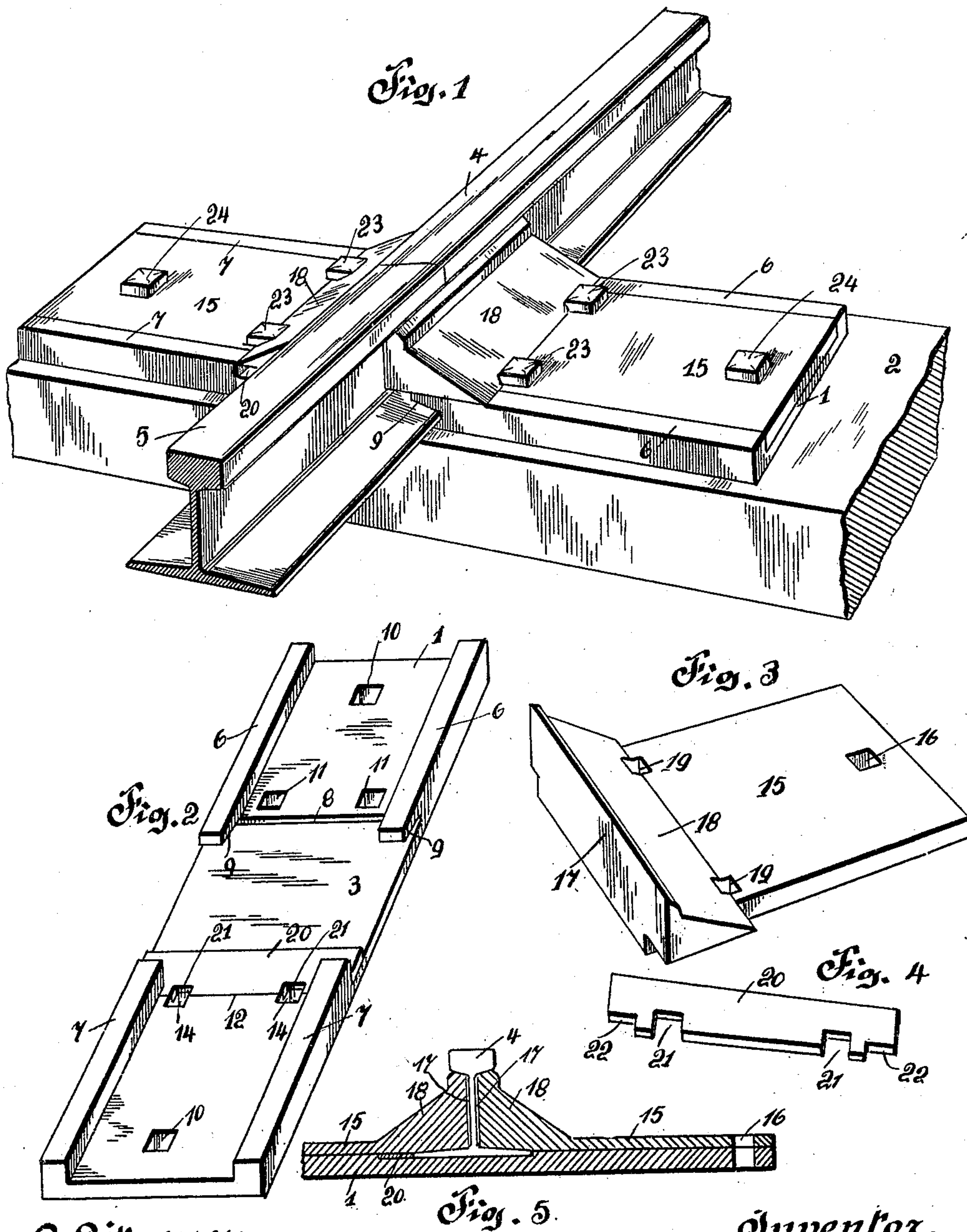
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H. A. RHINELANDER.

RAIL JOINT.

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Witnesses:

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HENRY A. RHINELANDER, OF FREEDOM, PENNSYLVANIA.

RAIL-JOINT.

No. 819,456.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 30, 1905. Serial No. 280,815.

To all whom it may concern:

Be it known that I, HENRY A. RHINELANDER, a citizen of the United States of America, residing at Freedom, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in rail-joints; and the invention has for its object the provision of novel means for firmly retaining the meeting ends of two rail-sections upon a cross-tie.

15 The invention aims to provide a rail-joint that can be easily and quickly laid and one that will withstand the rough usage to which rail-joints are subjected by rolling-stock passing over the rails at considerable rapidity.

20 A further object of this invention is to provide a rail-joint which will be extremely simple in construction, strong and durable, comparatively inexpensive to manufacture, and highly efficient when used.

25 With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

35 Figure 1 is a perspective view of my improved rail-joint, illustrating the same in position upon a cross-tie. Fig. 2 is a perspective view of a base-plate used in connection with my improved rail-joint. Fig. 3 is a perspective view of a novel form of fish-plate constructed in accordance with my invention. Fig. 4 is a perspective view of a liner; and Fig. 5 is a vertical sectional view of my improved rail-joint, illustrating a rail mounted therein.

45 To put my invention into practice, I employ a base-plate 1, adapted to be placed upon the top of a cross-tie 2 and retained thereon by suitable means, which will presently be described. The base-plate 1 is ob-
50 long and is preferably laid longitudinally upon the tie 2. The central portion of the base-plate is cut away to form a seat 3 for the confronting ends of the rail-sections 4 and 5. The longitudinal edges of the base-plate are
55 provided with upwardly-extending flanges 6 6 and 7 7, these flanges being preferably

formed by upsetting the material from which the plate is made. The flanges 6 6 protrude a short distance over the shoulder 8, formed by the seat 3, and the under faces of said
60 flanges are beveled, as indicated at 9 9.

The end of the base-plate 1 is provided with vertically-disposed apertures 10 10, and adjacent to the shoulder 8 apertures 11 11 are provided. The base-plate 1 adjacent to
65 the shoulder 12, formed by the seat 3, is provided with apertures 14 14, the cut-away portion of said apertures extending into the shoulder 12.

Reference will now be had to the novel
70 form of fish-plate which I employ for retaining the rails 4 and 5 upon the tie 2. I employ two fish-plates, one of which is illustrated in Fig. 3 of the drawings, and as these fish-plates are identical in construction I do not
75 deem it necessary to describe the detail construction of each. The fish-plate illustrated in Fig. 3 of the drawings consists of a body portion 15, one end of which is provided with a vertically-disposed aperture 16, while the
80 other end thereof is provided with a transversely-disposed enlargement or rib 17, one face of which is flush with the end of the body portion 15, while the other face of said enlargement gradually tapers to the body por-
85 tion 15, as indicated at 18. At the juncture of the tapering face of the enlargement and the body portion 15 I provide apertures 19 19. It will be observed that the ends of the transversely-disposed ribs 17 protrude a
90 slight distance beyond the sides of the body portion 15, and the object of this construction will be presently described.

When placing two rail-sections upon the base-plate 1, the rails are positioned upon
95 the seat 3 and the bases of said rails moved into engagement with the shoulder 8 of the seat 3, the bases of said rails engaging under the protruding ends of the flanges 6 6. To secure the rails in this position, I employ a
100 liner 20. (Illustrated in Fig. 4 of the drawings and shown in position in Figs. 2 and 5 of the drawings.) The one edge of this liner is cut away, as indicated at 21 21 and 22 22, to permit of said liner spanning the apertures 14 14
105 and embracing the inner ends of the flanges 7 7. When the liner has been placed in position to retain rail-sections upon the seat 3, the fish-plates are placed upon each end of the plate 1. The transversely-disposed en-
110 largements or ribs 18 18 are moved into engagement with the web portions of the rail-

sections 4 and 5, as illustrated in Fig. 5 of the drawings, at which time the apertures 19 19 of each fish-plate will aline with the apertures 11 11 and 14 14 of the base-plate 1, and suitable spikes or pins 23 23 are then employed for retaining the fish-plates and the base-plate in engagement with the tie 2. The apertures 16 16 of the fish-plates are adapted to aline with the apertures 10 10, formed in the ends of the base-plate, and suitable spikes or pins 24 24 are also employed for further securing the fish-plates in engagement with the base-plate upon the cross-tie 2.

The flanges 6 6 and 7 7 of the base-plate prevent any longitudinal movement in respect to the rails of the fish-plates, and the spikes and pins 23 and 24 prevent any longitudinal movement in respect to the tie 2 of the fish-plates or base-plate. The protruding ends of the flanges 6 6 and the protruding ends of the transversely-disposed ribs 17 17 of each fish-plate will prevent any vertical movement of the rail-sections 4 and 5, and it will be impossible for said rail-sections to become disjoined when they have been once secured upon a cross-tie by my improved rail-joint.

I have allowed sufficient space to exist between the web portions of the rail-sections and the fish-plates to permit of the expansion and contraction of said rails due to the variable temperature to which they are subjected.

While I have herein described the preferred manner of constructing my improved rail-joint, it is obvious that various changes may be made in the details of construction without departing from the general spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a rail-joint, the combination with rail-sections and a tie, of a base-plate, said base-plate having a seat formed therein, flanges carried by the longitudinal edges of said plate, the ends of two of said flanges ex-

tending over said seat and adapted to engage the bases of said rails, a liner adapted to be mounted upon said seat, fish-plates mounted upon the ends of said plate between said flanges, and means to secure said base-plate and said fish-plates in engagement with said tie and said rail-sections, substantially as described.

2. In a rail-joint, the combination with rail-sections and a tie, of a base-plate having a seat formed therein, adapted to support said rails, flanges carried by the longitudinal edges of said plate, a liner adapted to be mounted upon said seat and engaging one edge of the base of the rail, fish-plates adapted to be mounted upon the ends of said base-plate to engage said rail-sections, and means to secure said fish-plates and said base-plate upon said tie.

3. In a rail-joint, the combination with rail-sections, of a base-plate having a seat formed therein adapted to support said rails, a liner adapted to be mounted within said seat and to bear against the base of the rail to retain said rails therein, two separable fish-plates mounted upon the ends of said base-plate, and means to secure said fish-plates in engagement with said base-plate, substantially as described.

4. In a rail-section, the combination with a plate having a seat formed therein, flanges carried by the longitudinal edges of said plate, two fish-plates adapted to be mounted upon the ends of said plate and between said flanges said fish-plates being separable from said first-named plate, and means to secure said fish-plates in engagement with said plate, substantially as described.

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

HENRY A. RHINELANDER.

Witnesses:

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MILO E. READER.