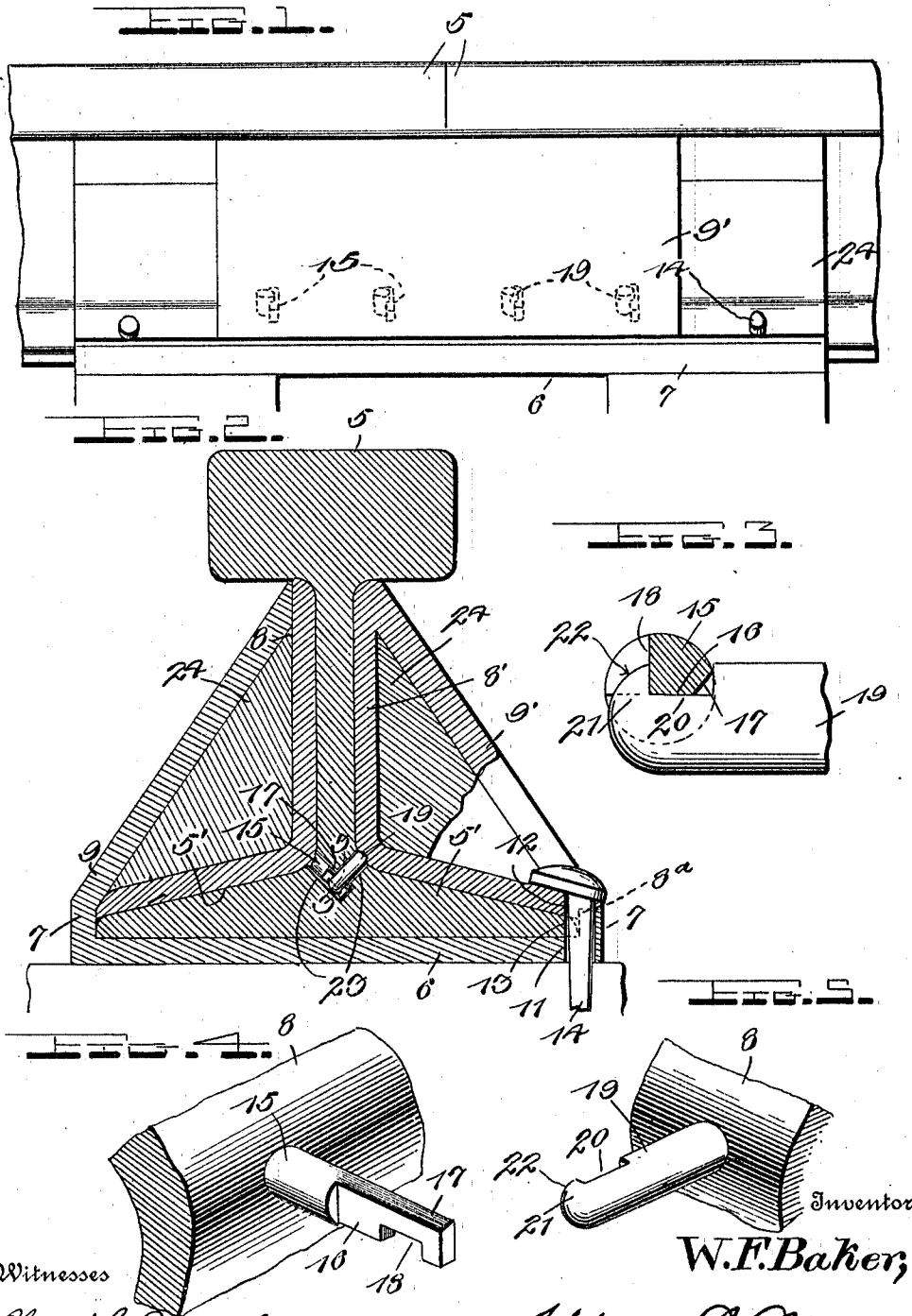


W. F. BAKER.
RAIL JOINT.
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Witnesses

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RAIL-JOINT.

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To all whom it may concern:

Be it known that I, WILLIAM F. BAKER, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain new and useful improvements in rail joints and has for its object to provide simple and efficient means for securely connecting the ends of abutting rail sections without necessitating the use of bolts or analogous fastening devices to connect the fish plates to the web of the rail thereby eliminating weakening of the rail at the joints.

20 A further object of the invention resides in the provision of interlocking means carried by the fish plates whereby the same are at all times held snugly against the opposite sides of the rail.

25 A still further and more specific object of the invention resides in the provision of a plurality of spaced interlocking members carried by the respective fish plates, and obliquely disposed communicating sockets or recesses extending downwardly into the rail base to receive said interlocking members whereby said members are rendered inaccessible and the unauthorized removal or separation of the abutting rail sections is absolutely prevented.

35 With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described, and claimed, and illustrated in the accompanying drawings, in which,

40 Figure 1 is a side elevation of a rail joint embodying the present invention; Fig. 2 is a transverse section; Fig. 3 is an enlarged detail section taken on the line 3—3 of Fig. 2; and Figs. 4 and 5 are detail fragmentary perspective views of the respective fish plates showing the interlocking members carried thereby.

50 Referring in detail to the drawings 5 designates the abutting ends of adjacent rail sections which are to be connected by means of my improved joint. These rail sections are seated upon a chair 6, which at its longitudinal edges is provided with upstanding flanges 7 between which the base of the

rail is disposed, said rail base extending substantially the entire width of the chair plate between said flanges. Upon one of the longitudinal flanges 7 of the chair 6 the inclined bracing plate 9 is integrally formed, and between this plate and the web of the rail the fish plate 8 is adapted to be arranged, the upper edge of the bracing plate engaging closely with the vertical portion of the fish plate immediately beneath the head of the rail. The brace plate 9 is of less length than the chair plate 6, and the longitudinal flange 7 of said chair plate beyond the ends of the fish plate is provided with spike receiving openings with which recesses in the edge of the base flange of the rail are adapted to coincide to receive the fastening spikes 14 whereby the chair is rigidly secured upon the supporting ties. Spike receiving openings 11 are also formed through the other longitudinal flange 7 of the chair and the base flange of the fish plate 8' is provided adjacent to its ends and at the edge of its base portion with openings 12 to aline with the openings 11, the edge of the base flange 5' of the rail being notched as at 13 to coincide with said openings and receive the fastening spikes 14. With the vertical and horizontal inclined portions of this latter fish plate a diagonal brace plate 9' is integrally formed. It will be noted from reference to Fig. 2 that the flange 7 of the chair plate extends above the edge of the rail base, and against the same a longitudinally extending shoulder 8^a formed upon the upper edge of the fish plate 8' abuts. It will be observed from the above description that the securing spikes are common to all elements of the joint and effectually prevent relative longitudinal or transverse movement of the chair or fish plate 8' with relation to the rail.

In order to deaden the noise as much as possible occasioned by pounding of the rails when a train passes over the joint, I provide the fiber or wood blocks 24 which are disposed between the inclined bracing plates 9 and 9' and the vertical and horizontal portions of the fish plate 8 and 8'. The sound deadening blocks are of substantially triangular form in cross section and extend the entire length of the chair 6.

In order to hold the fish plates closely against the opposite sides of the abutting rail sections and to prevent their removal,

I provide upon one of the fish plates on its inner surface and at the juncture of the vertical portion thereof with the inclined foot or flange, the obliquely disposed pins 15. These pins may be integrally formed with the fish plates or consist of separate elements threaded therein. The pins 15 are of a general cylindrical form and have their ends reduced and provided with flat faces 16. One of the longitudinal edges of these flattened end portions of the pins is beveled as indicated at 17 while the other edge thereof is notched or recessed as at 18. The other of the fish plates carries similar cylindrical pins 19 also formed thereon or secured to the plates at the juncture of the flange and the vertical web engaging portion. These pins adjacent their ends are notched as indicated at 20 which provides lips 21 on the extremities of the pins, the under surfaces of said lips being convex as indicated at 22 to engage the beveled edges 17 of the reduced end portions of the pins 15. The rail sections are provided at the juncture of the web and base portions thereof with the downwardly and inwardly inclined openings 23 which communicate at their inner lower ends. These openings extending into the base of the rail are of sufficient diameter to readily receive the pins 15 and 19 carried by the fish plates and permit of a slight relative movement thereof when the ends of the pins are engaged.

In assembling the parts of the joint, the fish plate 8 is first arranged upon one side of the web of the abutting ends of adjacent rail sections, the pins 15 on said plate being disposed in the sockets 23 of the rail base. The chair plate 6 is now arranged beneath the rail, the brace plate 9 carried thereby engaging the vertical portion of the fish plate 8. The other of the fish plates 8' is now disposed against the opposite side of the rail web, the pins 19 thereof being inserted into the downwardly inclined sockets extending into the rail base. The convex surfaces 22 of the lips 21 on the pins 19 engage with the beveled edges 17 of the pins 15 and cause a slight relative movement of the ends of the pins in opposite directions to permit the lip 21 to move across the flat face 16 of the pin 15 and into the recess or notch 18 of the latter pin, the reduced end portion of the pin 15 being received in the notch or recess 20 of the pin 19. Thus the pins on the respective fish plates are interlocked and as they are entirely disposed within the body of the rail, it will be impossible to separate the rail sections by the removal of the fish plates. Thus a secure and permanent connection of the fish plates is obtained whereby they are held snugly in engagement with opposite faces of the rail web and upon the base of the rail. Even if the securing spikes 14 should become loosened or entirely removed, the

abutting ends of the rails will still be securely held together and the fish plates prevented from moving with relation thereto by means of the interlocking pins 15 and 19.

From the foregoing it is thought that the construction and operation of my improved rail joint will be clearly understood. The device is simple in construction, may be inexpensively manufactured and the parts thereof easily and quickly assembled. The joint is extremely strong, durable and efficient in practical use and absolutely prevents the relative longitudinal or vertical movement of the rail sections.

While I have shown and described the preferred form and arrangement of the various elements, it will be understood that the invention is susceptible of considerable modifications without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. The combination with the abutting rails, of fish plates arranged upon opposite sides thereof, said rails being provided with communicating openings extending into their base portions, and interlocking means carried by the respective fish plates to be received in said communicating openings and hold the fish plates in close engagement with the rails.

2. The combination with the abutting rails, of fish plates arranged upon opposite sides thereof, said rails having inwardly and downwardly extending communicating openings at the juncture of the web and base portions thereof, and members carried by the respective fish plates adapted to be disposed in said openings and having interlocking engagement to hold the fish plates in close engagement upon the rails.

3. The combination with the abutting rails, of fish plates arranged upon opposite sides thereof, said rails having spaced inwardly and downwardly inclined communicating openings extending into the base portions of the rails, and spaced members carried by the respective fish plates to extend into the openings in the rails and having interlocking engagement at the inner communicating ends of said openings.

4. The combination with the abutting rails, of fish plates arranged upon opposite sides thereof, said rails having inwardly and downwardly inclined communicating openings at the juncture of the web with the base portion of the rails, and obliquely disposed pins projecting from the inner face of the respective fish plates to be received in said openings, the pins on one fish plate having lips formed thereon for interlocking engagement with recesses provided in the pins carried by the other plate.

5. The combination with the abutting

rails, of fish plates arranged upon opposite sides of said rails, and interlocking means carried by the respective fish plates and extending into the base portions of the rails.

5 6. The combination with the abutting rails, of a chair plate having longitudinal flanges between which the rails are seated, fish plates arranged upon opposite sides of the rails and closely engaging the web and
10 base portions thereof, said chair plate and the fish plates being provided adjacent their ends with coinciding spike receiving openings, a brace plate integrally connecting the vertical and horizontal portions of one of the
15 fish plates, a brace plate formed upon one of the longitudinal flanges of the chair and bearing against the vertical portion of the other fish plate, and sound deadening blocks arranged between the brace plates and the
20 fish plates.

7. The combination with the abutting rails, of a chair plate provided with longitu-

dinal flanges between which the rails are seated, fish plates arranged upon opposite sides of the rails, one of said fish plates hav- 25
ing an inclined brace plate integrally formed with the vertical and horizontal portions of said fish plate at the edges thereof, a brace plate integrally formed upon one of the flanges of the chair plate to engage the ver- 30
tical portion of the other of the fish plates, said bracing plates being of less length than the fish plates, the chair plate and the fish plates having coinciding openings adjacent to their ends to receive the securing spikes, 35
and fibrous sound deadening blocks arranged between the brace plates and fish plates and extending the entire length of the fish plates.

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 40

WILLIAM F. BAKER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."