

O. H. COURSON.

RAIL JOINT.

APPLICATION FILED OCT. 17, 1911.

1,043,570.

Patented Nov. 5, 1912.

Fig. 1.

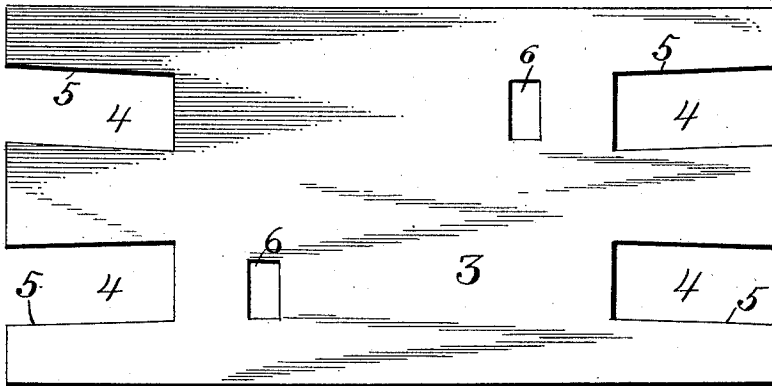
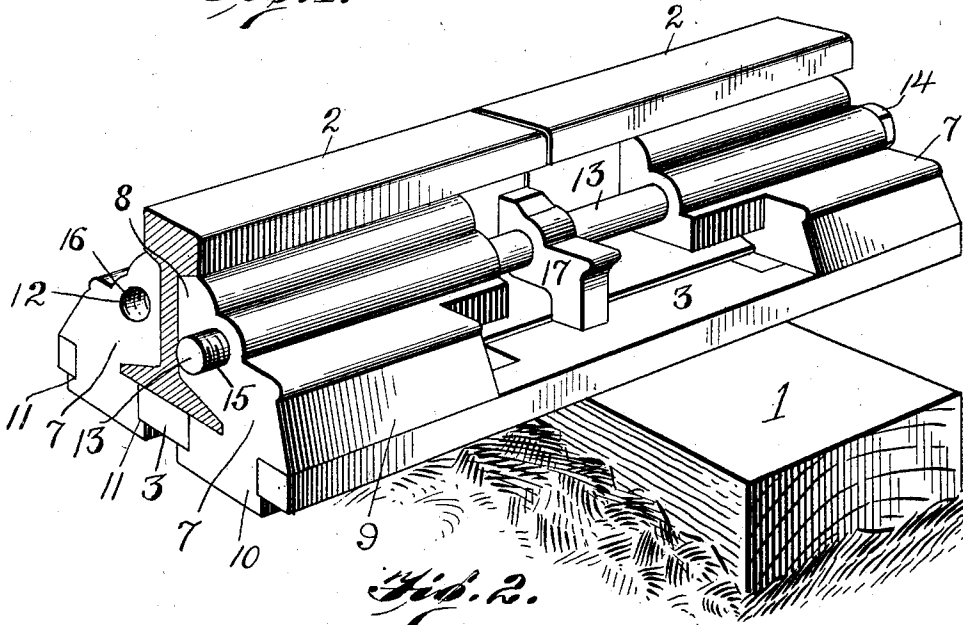
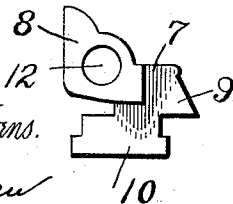
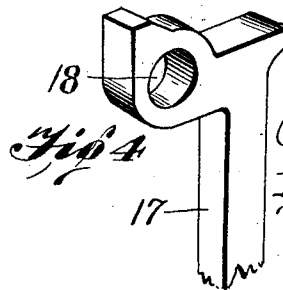


Fig. 3.



Witnesses
Russell L. Starns.
M. H. Freeman



Inventor
Oliver H. Courson.
By *A. H. Bunn*
Attorney

UNITED STATES PATENT OFFICE.

OLIVER H. COURSON, OF MEMPHIS, TENNESSEE.

RAIL-JOINT.

1,043,570.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed October 17, 1911. Serial No. 655,182.

To all whom it may concern:

Be it known that I, OLIVER H. COURSON, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to certain new and useful improvements in rail joints or devices for securing railroad rails in position, the same having for its objects among others to provide a simple and efficient means for fastening the rails at the joint, with means for adjustment of one or both of the opposite fish plates lengthwise of the rail so as to securely grip the rail and form a clamp therefor and at the same time grip the rail and tie together with such pressure as to prevent all spreading of the rails, yet permitting of ready removal when desired for replacement of the rail or for any other desired purpose.

Briefly stated, the invention comprises a chair having at opposite ends inwardly extending slots the outer side walls of which are tapered and inclined inwardly forming wedges or cam surfaces, the fish plates having portions designed to engage in said slots, the construction being such that when the fish plates at opposite ends of the chair are drawn toward each other they are also drawn inwardly toward the rail so as to more firmly clamp the same. Furthermore I provide a spike having a passage there-through adapted to receive the means which connect the fish plates upon opposite sides of the joint and by which the two fish plates upon one side of the rail are drawn the one toward the other.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is capable of embodiment in a variety of forms, the essential one of which is herein illustrated.

The invention in such preferred form is clearly illustrated in the accompanying drawings, which, with the numerals of ref-

erence marked thereon, form a part of this specification, and in which:

Figure 1 is a detailed perspective view of the chair showing the rails therein, one of the latter being shown in cross section; Fig. 2 is a top plan of the chair; Fig. 3 is an end view of one of the fish plates on a smaller scale; Fig. 4 is a perspective detail of the spike with a portion broken away.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings—1 designates a tie and 2, 2 portions of the adjacent ends of adjoining rails, these latter being of any of the conventional forms.

3 is the chair adapted to receive and support the ends of such rails, and as will be seen upon reference to Fig. 2, this chair is formed at each end with two slots 4, 4 extending longitudinally thereof from the ends inwardly, each slot having its side walls out of parallelism with the longitudinal central line through the chair so that the outer walls 5 of said slots will taper inwardly forming a wedge or cam surface for a purpose which will soon be made apparent. This chair is shown in Fig. 2 as provided with spike openings 6, which, however, may be omitted under some circumstances.

7 are the fish plates, and as they are all alike a detailed description of one will suffice for all. Each fish plate comprises a body portion having the upwardly extending part 8 adapted to engage the web of the rail and preferably beneath the under face of the tread thereof as seen in Fig. 1, a projecting portion 9 adapted to have a flat bearing upon the upper face of the chair 3, and a depending portion 10 adapted to be received in the corresponding slot 4 of the chair. The inter-engaging or interlocking portions of the chair and fish plate may be varied. The walls of the slot may be under-cut and the side walls of the depending portion 10 correspondingly inclined so as to form a dovetailed connection, or the depending portion 10 of the fish plate may be shouldered as seen at 11 so as to engage upon the under side of the opposite walls of the slot as seen

clearly in Fig. 1, the object being to prevent vertical displacement of the fish plate. It will thus be evident that when the fish plates are put in position upon opposite sides of the rails, if the fish plates are moved inwardly in the slots the inclined outer walls of such slots will necessarily force the fish plates inwardly toward the rail so that the latter will be firmly gripped and clamped thereby.

Any suitable means may be provided for drawing or forcing the fish plates inwardly. They may be driven in and held in any convenient manner but in the present instance I have chosen to show an efficient means for holding the fish plates in position as well as for forcing them inwardly when desired. For this purpose I provide each fish plate with a longitudinal opening 12 for the reception of a rod 13, which extends lengthwise of the rail and through the coincident holes in the two fish plates at opposite ends of the chair. This rod is provided at one end with a head or the like 14, or any suitable means to form a shoulder adapted to bear against the outer end of the fish plate, the other end being screw-threaded as seen at 15 and adapted either to receive a nut or to have threaded engagement with interior threads 16 in the opening 12 of the adjacent fish plate. It will thus be apparent that by this means the two fish plates at the opposite ends of the rod are not only securely bound together but may be drawn toward each other by proper manipulation of the nut or rod as the case may be.

In Fig. 1 I have illustrated how I may employ a spike in connection with the means above described, the spike 17 being provided with an opening 18 in the head portion thereof, which is adapted to receive the rod 13 as seen in Fig. 1, the spike being designed to be driven through the opening 6 in the chair and into the tie 1, as seen in Fig. 1. It will be observed that the slots 4, are of uniform width from end to end, and that the depending portions 10 of the fish plates are also of a uniform width from end to end. It is therefore apparent that, when the fish plates are drawn or forced inwardly, they will be caused by the inward convergence of the slots 4 to move toward the rail at the same time, and will grip said rail after the manner of a vise.

From the foregoing it will be obvious that I have devised a simple and efficient form of means for fastening the adjacent ends of railroad rails in place, and while the structural embodiment of the invention, as herein disclosed, is what I at the present time consider preferable, it is evident that the same is subject to changes, variations and modifications in detail without departing from the spirit of the invention or sac-

rificing any of its advantages. I therefore do not wish to restrict myself to the details of construction hereinbefore disclosed but reserve the right to make such changes, variations and modifications in the form, proportion of parts, etc., as come properly within the scope of the protection prayed.

What is claimed as new is:—

1. A rail joint embodying a substantially flat chair having a slot independent of the rail engaging members with inwardly inclined outer walls, and a fish plate having a portion for coöperation with said slot.

2. A rail joint comprising a chair having oppositely extending slots at its ends, the outer wall of each slot being inclined and a fish plate independent of said chair and having a portion for coöperation with one of said slots, and means for preventing vertical displacement of the fish plate.

3. A rail joint comprising a substantially flat chair having inwardly extending slots at each end with the outer walls of said slots inclined inwardly, fish plates having portions engaging and projecting through said slots and means for drawing the fish plates longitudinally.

4. A rail joint comprising a substantially flat chair having inwardly extending slots at each end with the outer walls of said slots inclined inwardly, fish plates having portions engaging and projecting through said slots and screw means for drawing the fish plates longitudinally.

5. A rail joint comprising a substantially flat chair having inwardly extending slots at each end, fish plates having portions engaging and projecting through said slots and means connecting the fish plates at opposite ends of the chair for moving them lengthwise of the chair and inwardly toward a rail.

6. A rail joint comprising a substantially flat chair with slots at its end, said slots having inwardly converging outer walls fish plates having portions engaging and projecting through said slots and means for preventing vertical displacement of the fish plates, and means for moving the fish plates lengthwise of the chair and simultaneously drawing them inwardly toward the rail.

7. In a rail joint the combination with a chair of substantially flat form having oppositely extending slots at its ends the outer wall of each slot being inclined, fish plates having portions extending through and engaging in said slots, a spike interposed between the fish plates on one side of the rail, and means extending longitudinally of the fish plates, through the same and through an opening in the spike for drawing the fish plates toward each other.

8. In a rail joint the combination with a chair of substantially flat form having op-

positely extending slots at its ends the outer wall of each slot being inclined, fish plates having portions extending through and engaging in said slots, a spike interposed between the fish plates on one side of the rail, and means extending longitudinally of the fish plates, through the same and through an opening in the spike for drawing the fish plates toward each other, the walls of said slots and the side walls of the depending portion of the fish plates being respectively undercut and inclined to form a dovetail connection.

9. In a rail joint the combination with a chair, fish plates, and means for connecting the latter and drawing them toward each other and inwardly toward a rail, of a spike having an opening for the passage of said means.

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

OLIVER H. COURSON.

Witnesses:

A. M. BUNN,
M. K. FREEMAN.

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