M. O. CARTER.

RAILWAY RAIL JOINT.

APPLICATION FILED JUNE 23, 1910.

992,159. **Patented May 16, 1911.**

2 SHEETS—SHEET 1.

Fig. 1.

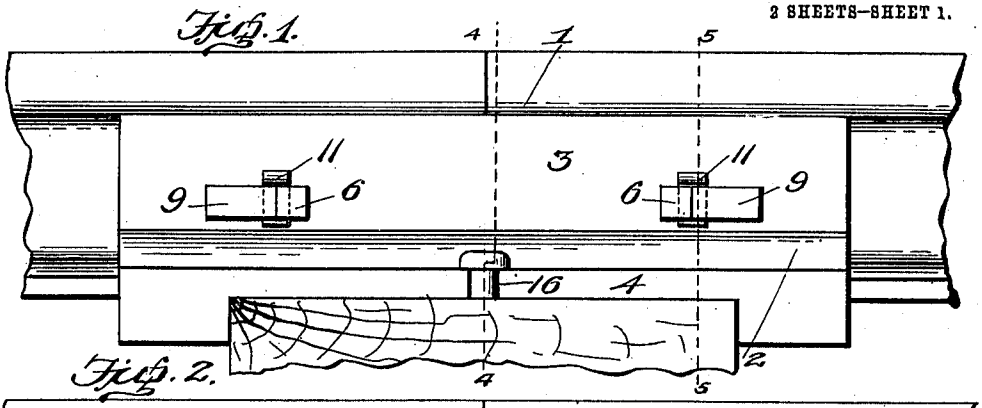


Fig. 2.

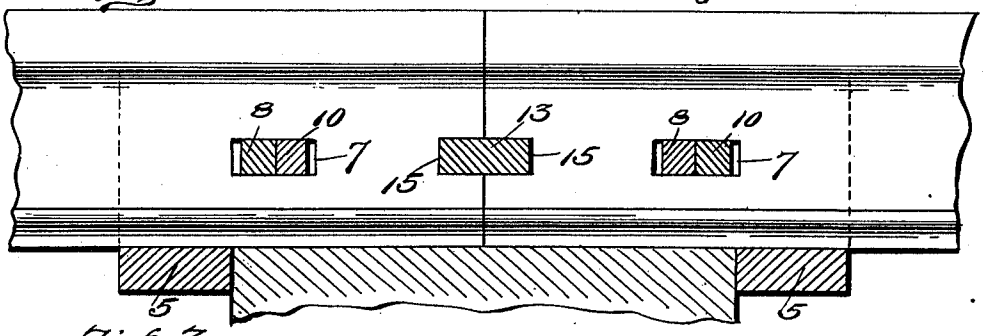


Fig. 3.

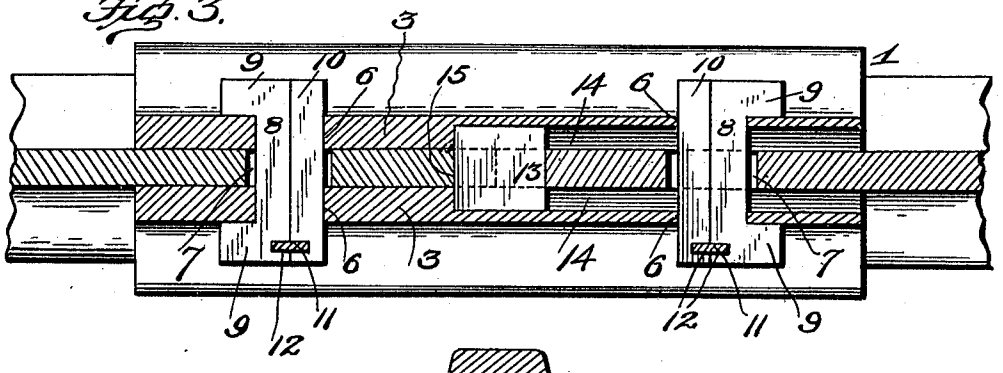
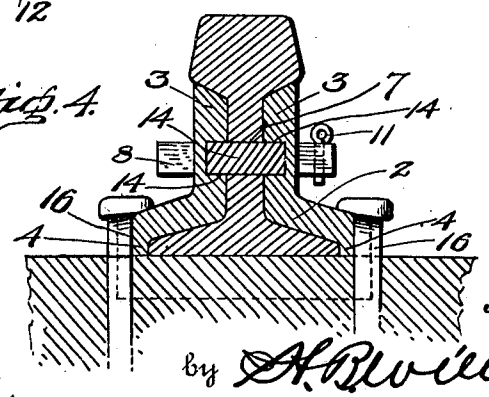


Fig. 4.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

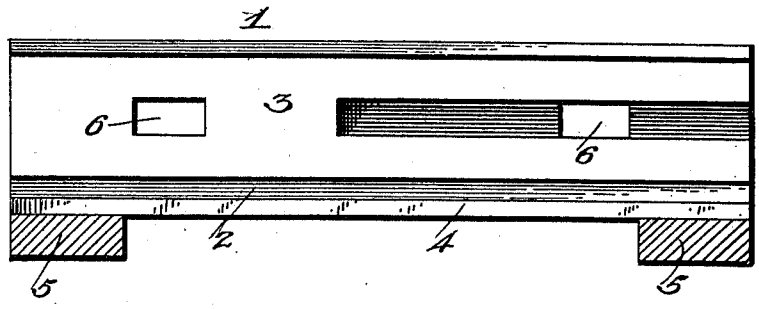


Fig. 7.

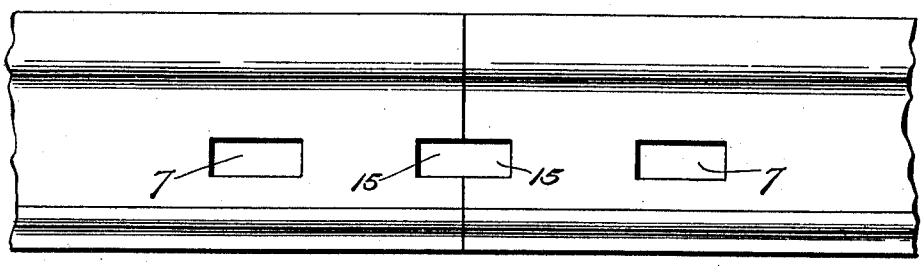


Fig. 5.

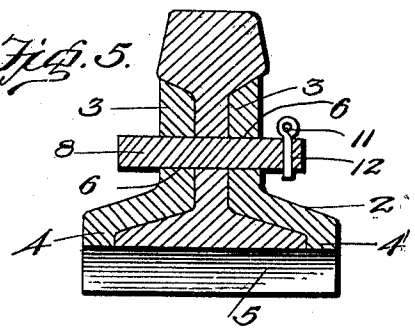
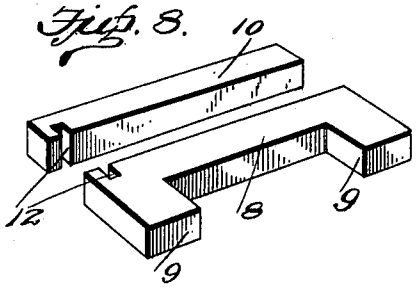


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

MATTHEW O. CARTER, OF TRAVELLERS REST, SOUTH CAROLINA.

RAILWAY-RAIL JOINT.

992,159. Specification of Letters Patent. Patented May 16, 1911.

Application filed June 23, 1910. Serial No. 568,513.

To all whom it may concern:

Be it known that I, MATTHEW O. CARTER, a citizen of the United States, residing at Travellers Rest, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Railway-Rail Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway rail joints.

One object of the invention is to improve the construction of railway rail joints whereby the same will be stronger, more durable and safer than the usual form of joints.

Another object is to provide a rail joint having means whereby the ends of the rails are prevented from sagging or from being depressed when a train passes over the same.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of the meeting ends of two railway rails showing my improved joint applied thereto: Fig. 2 is a vertical longitudinal sectional view: Fig. 3 is a horizontal sectional view taken on a line with the rail fastenings: Fig. 4 is a vertical cross sectional view on the line 4—4 of Fig. 1; Fig. 5 is a similar view on the line 5—5 of Fig. 1; Fig. 6 is a longitudinal vertical sectional view through the joint removed from the rails; Fig. 7 is a side view of the ends of the rails; and, Fig. 8 is a detail perspective view of one of the rail clamps and keys.

Referring more particularly to the drawings 1 denotes my improved joint which is in the form of a combined chair 2 and fish plates 3. The chair comprises side bars 4 which are connected together at their opposite ends and on their under sides by integral cross plates 5. The fish plates 2 are also formed integral with the side bars 4 and are adapted to engage the web of the rails in the usual manner, while the side bars 4 engage the edges of the flanges of the rails. In the opposite sides of the fish plates near each end are formed pairs of alined horizontally disposed slots 6, while in the adjacent ends of the rails are formed slots 7 which register with the slots 6 in the fish plates.

Through the alined slots in the fish plates and ends of the rails are inserted clamps which consist of bars 8 having on their opposite ends right angular offset lugs 9 which when the bars are inserted through the slots engage the outer sides of the fish plates and are thus secured against lateral movement or slipping out of the slots. The clamping bars when thus engaged are locked in position by key bars 10 which are also inserted through the slots 6 and 7 and hold the clamping bars 8 in operative engagement with the fish plates. The key bars 10 are held in place by pins 11 which are inserted in slots formed by alined notches 12 in the adjoining edges of the key and clamping bars as shown. The slots 7 in the rails are of greater length than the combined width of the keys and clamping bars thus allowing for the expansion and contraction of the rails.

In order to prevent the ends of the rails from being depressed when a train passes over the same I provide a core plate 13 the opposite ends of which are engaged with grooves or channels 14 formed in the opposite inner sides of the fish plates as shown. The webs of the meeting ends of the rails are provided with notches 15 which when the rails are in place engage the opposite sides of the plate 13 whereby said ends of the rails are supported and prevented from sagging or being depressed.

The cross plates 5 of the chair are preferably of such distance apart as to engage the opposite sides of a tie and in the outer edges of the side bars 4 and midway between the ends thereof are formed notches 16 with which are engaged spikes driven into the ties, whereby the joint and rails are prevented from creeping or slipping longitudinally.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the prin-

ciple or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention what I claim is:

1. In a railway joint, the combination with abutting rails having notches in the engaging ends of their webs and a longitudinal slot therein adjacent to each end of the rails, of fish plates disposed upon the webs and base flanges of the rails upon opposite sides and having slots therein to aline with the slots in the rails, each of said fish plates also having a longitudinal groove in its inner face extending inwardly from one end to the notches in the ends of the rails, a core plate adapted to be seated in said notches and received in said grooves when the fish plates are arranged on the rails, and means extending through the alined slots of the fish plates and rails to lock the same together.

2. In a railway joint, the combination with abutting rails having notches in the engaging ends of their webs and a longitudinal slot therein adjacent to each end of the rails, of fish plates disposed upon the webs and base flanges of the rails upon opposite sides and having slots therein to aline with the slots in the rails, each of said fish plates also having a longitudinal groove in its inner face extending inwardly from one end to the notches in the ends of the rails, a core plate adapted to be seated in said notches and received in said grooves when the fish plates are arranged on the rails, clamping bars extending through the alined slots of the fish plates and rails and having their ends disposed at right angles for engagement upon the faces of the fish plates, key bar disposed through said slots and engaged with one edge of the clamping bars, means connecting the bars at their opposed edges adjacent to one of their ends to prevent their relative longitudinal movement, and transverse bars connecting said fish plates at their ends and extending under the rails.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MATTHEW O. CARTER.

Witnesses:
REX LANFORD,
JOS. A. LEAGUE.

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