

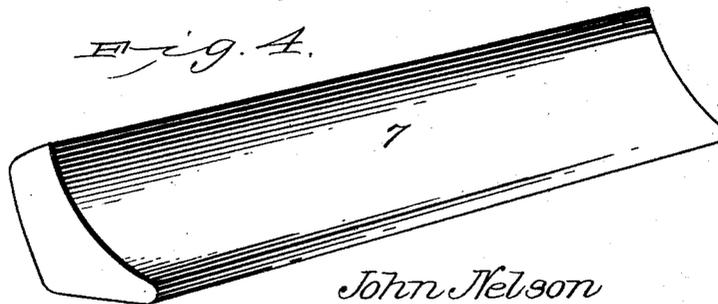
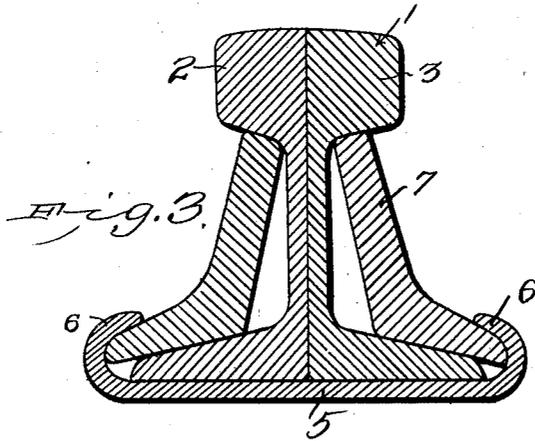
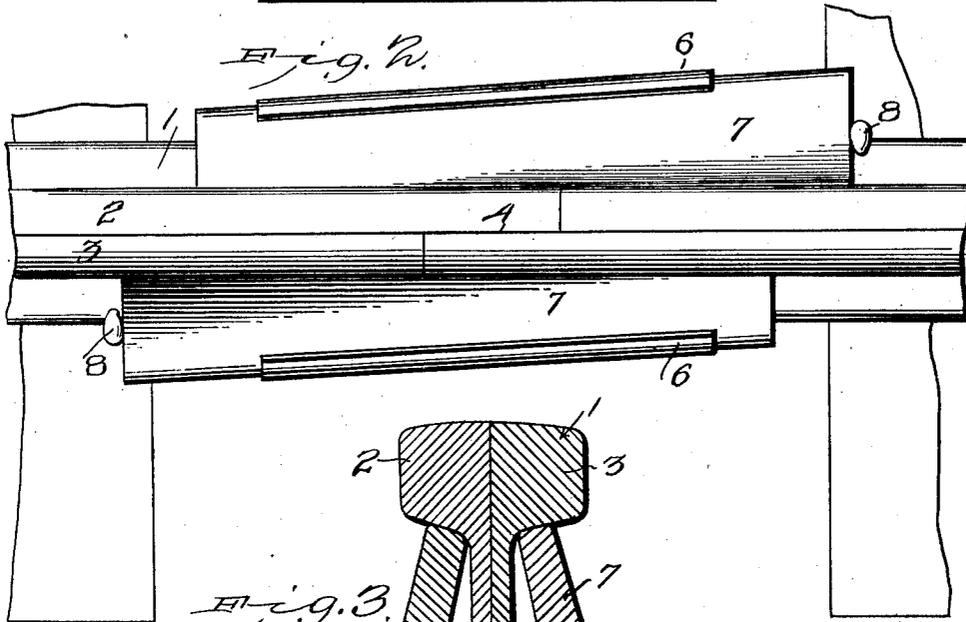
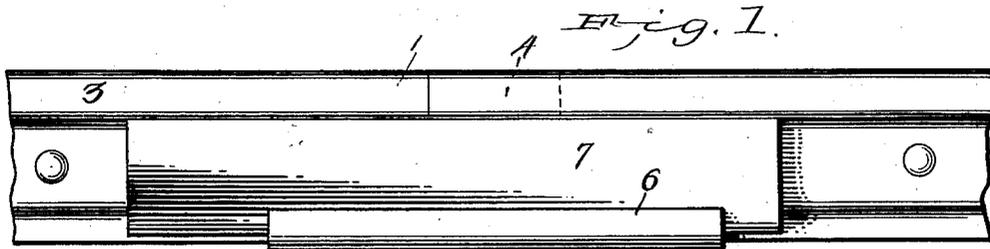
No. 737,654.

PATENTED SEPT. 1, 1903.

J. NELSON.
RAIL JOINT.

APPLICATION FILED AUG. 30, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN NELSON, OF WEST BAY CITY, MICHIGAN, ASSIGNOR OF ONE-HALF
TO MARTIN NELSON, OF WEST BAY CITY, MICHIGAN.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 737,654, dated September 1, 1903.

Application filed August 30, 1902. Serial No. 121,632. (No model.)

To all whom it may concern:

Be it known that I, JOHN NELSON, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented a new and useful Rail-Joint, of which the following is a specification.

The invention relates to improvements in rail-joints.

The object of the present invention is to improve the construction of rail-joints and to provide a simple and comparatively inexpensive one of great strength and durability adapted to afford a continuous tread for the wheels of a train and capable of enabling two rails to be firmly secured together without the use of bolts and nuts.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation of a rail-joint constructed in accordance with this invention. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view. Fig. 4 is a detail view of one of the wedge-shaped fish-plates.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a rail composed of two longitudinal sections 2 and 3, fitted together, as illustrated in Figs. 2 and 3, and preferably secured against lateral movement or separation by means of rivets, bolts, or other suitable fastening devices; but clamps may be employed for holding the sections together. One of the sections is extended beyond the other to form a recess to receive the extended end of the adjacent rail to form an overlapping joint 4 to provide a continuous unbroken tread for the wheels of a train. The ends of the rails are arranged upon a bottom plate 5, which has its side edges extended upward to form flanges 6, which are curved upward and inward and which are adapted to be engaged by the lower outer edges of wedge-shaped fish-plates 7. The flanges 6, which extend longitudinally of the rails, are arranged at an

angle thereto and are parallel, as shown in Fig. 2, to provide reversely-disposed tapering spaces for the reception of the wedge-shaped fish-plates, which are reversely arranged. The fish-plates, which are reversely arranged, are driven between the rails and the flanges 6 from opposite ends of the plate 5 and they engage under the heads of the rails and extend into the jaws formed by the curved flanges 6. The fish-plates are arranged at a slight inclination, as shown in Fig. 3, and are effectually prevented from becoming accidentally displaced through jar or vibration. The rails are firmly clamped and the sections of each rail are securely held together by the wedging action of the fish-plate, and this clamping action does not interfere with the expansion and contraction of the rails incident to changes in temperature.

It is to be especially noted, as clearly illustrated in Figs. 1 and 4, that the outer diagonal edges of the fish-plates are wedge-shaped longitudinally from end to end in a vertical plane and that owing to thus shaping the edges of the fish-plates they will when driven home beneath the overturned edges of the side flanges of the bottom plate exert a wedging action upon the latter in a vertical plane which will serve to draw the plate 5 firmly upward against the base portions of the rails. Thus the fish-plates serve the twofold function of clamping the rail-sections together and of maintaining the bottom plate firmly in position beneath the rail. The wedges, which may be locked against accidental longitudinal movement by split keys or similar fastening devices, are preferably secured by means of spikes 8, which are driven into the cross-ties adjacent to the enlarged ends of the fish-plates, as clearly shown in Fig. 2, and these spikes may also be advantageously employed for securing the rails to the cross-ties. The upper edges of the wedge-shaped fish-plates are set inward from the side faces of the heads of the rails to enable the flanges of car-wheels to clear them, and the inner faces of the fish-plates, which are angular in cross-section, are spaced from the webs of the rails, as shown in Fig. 3.

It will be seen that the rail-joint is simple

and comparatively inexpensive in construction, that it affords a solid continuous rail, and that the wedge-shaped fish-plates operate to clamp the ends of the rails together and also to hold the rail-sections firmly against lateral movement. Furthermore, it will be clear that bolts and similar fastening devices are dispensed with at the rail-joint and that the clamping devices do not interfere with the contraction and expansion of the rails incident to changes in temperature.

What is claimed is—

1. In a rail-joint, the combination with two rails arranged end to end, of a bottom plate lying beneath the meeting ends of the rails and provided with upwardly-extending diagonally-disposed side flanges overturned at their upper edges, and a pair of reversely-disposed wedge-shaped fish-plates situated one at either side of the rails and inserted between the web of the same and the vertically-disposed side flanges of the bottom plate, said fish-plates having each a straight longitudinal inner face to fit against the web of the rails and a diagonally-disposed straight outer edge which is wedge-shaped longitudinally in a vertical plane and extends parallel to the adjacent flange of the bottom plate and

engages beneath the overturned upper edge of the same. 30

2. In a rail-joint, the combination with a pair of rails arranged end to end and provided with overlapping end portions, of a bottom plate lying beneath the meeting ends of the rails and provided with diagonally-disposed upwardly-extending side flanges overturned at their upper edges, and a pair of wedge-shaped fish-plates situated one at either side of the rails and seated between the web of the latter and the side flanges of the bottom plate, said fish-plates having each an inner straight longitudinal face which lies against the web of the rails and a diagonal outer edge which is wedge-shaped longitudinally in a vertical plane and extends parallel to the adjacent flange of the bottom plate and engages beneath the overturned upper edge of the same. 40 45

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 50

JOHN NELSON.

Witnesses:
 JESSE ROSEBUSH,
 W. H. PHILLIPS.