

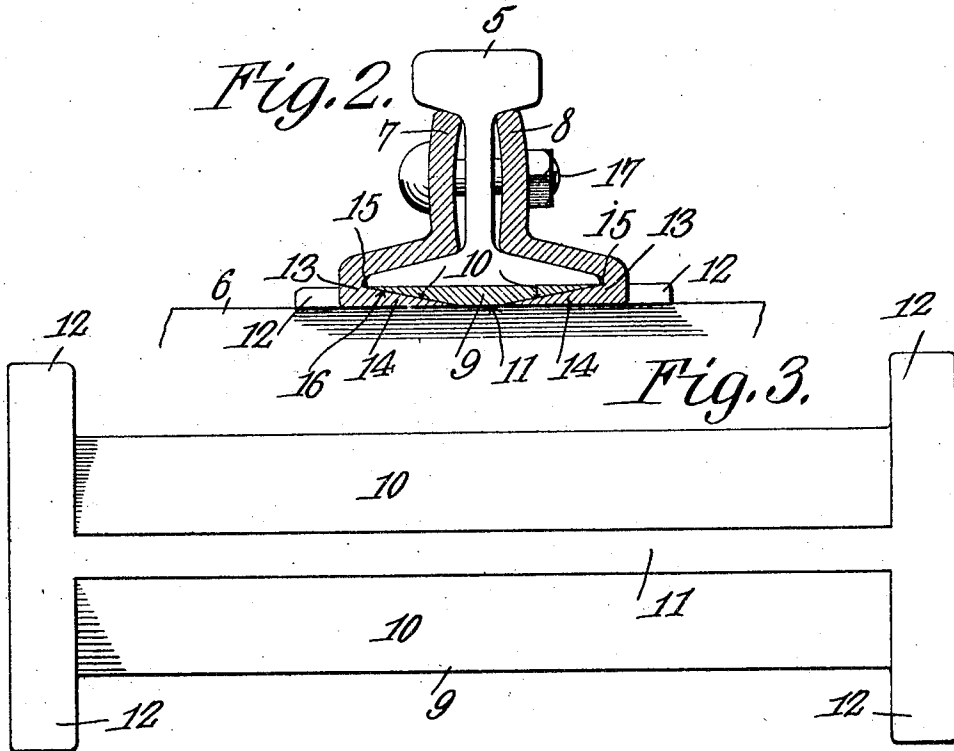
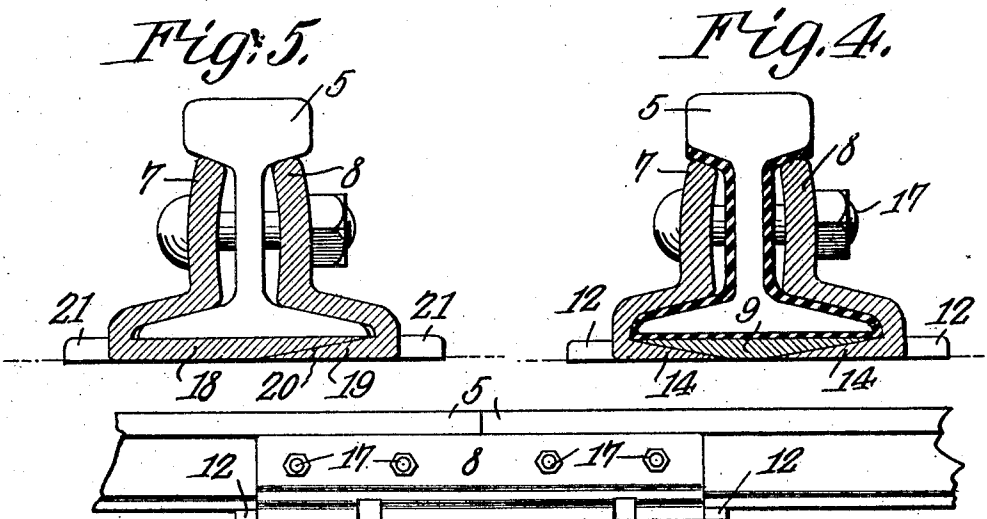
No. 849,434.

PATENTED APR. 9, 1907.

C. H. STEPHENS.  
RAIL JOINT.

APPLICATION FILED JAN. 22, 1907.

2 SHEETS—SHEET 1.



WITNESSES: *Fig. 1.* Charles H. Stephens <sup>INVENTOR</sup>  
*E. H. Smith*  
*J. H. McKen*  
By *C. A. Snow & Co.*  
ATTORNEYS

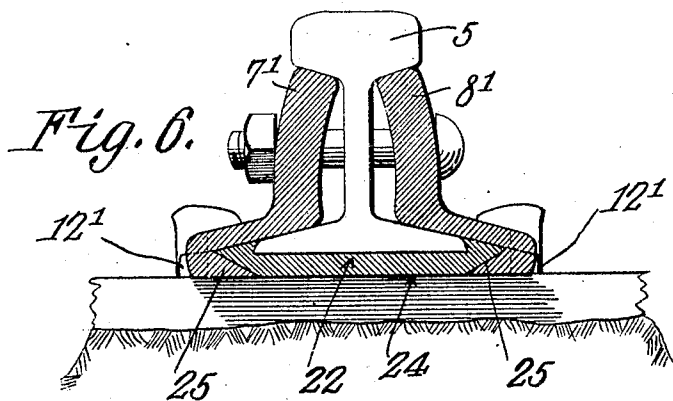
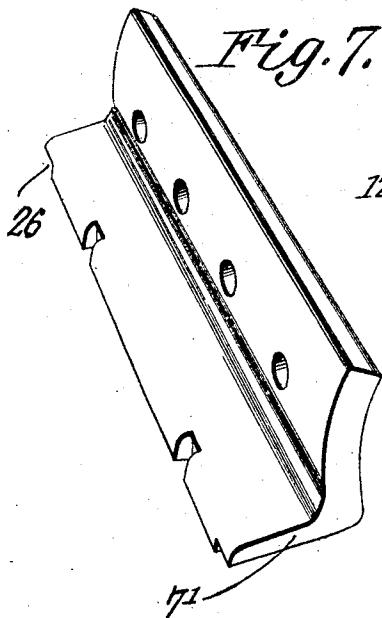
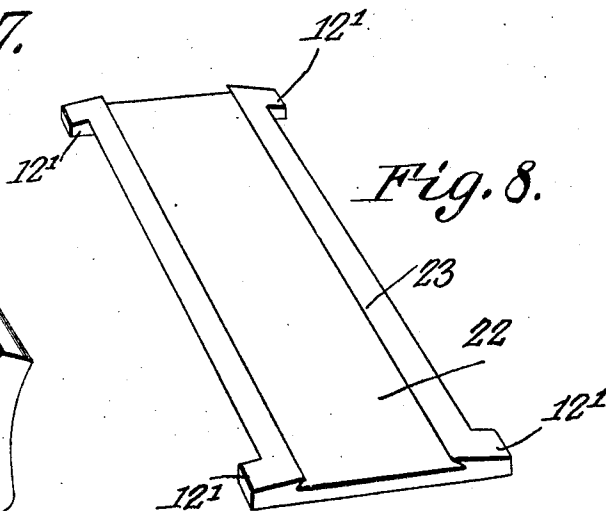
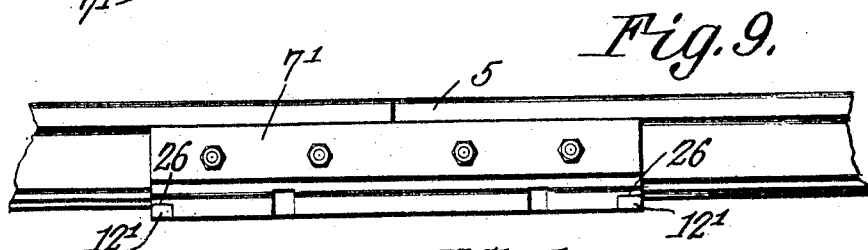
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RAIL JOINT.

APPLICATION FILED JAN. 23, 1907.

2 SHEETS—SHEET 2.



WITNESSES:

*E. J. Stewart*  
*A. J. Gardner*

*Charles H. Stephens,*

INVENTOR.

By

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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

CHARLES H. STEPHENS, OF BARTLETT, TEXAS.

## RAIL-JOINT.

No. 849,434.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed January 22, 1907. Serial No. 353,494.

*To all whom it may concern:*

Be it known that I, CHARLES H. STEPHENS, a citizen of the United States, residing at Bartlett, in the county of Williamson and State of Texas, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to rail-joints of that general class shown and described in Letters Patent issued to me on the 9th day of January, 1906, under No. 809,536.

The object of the invention is to improve, simplify, and cheapen the construction of the rail-joint by making the same in sections capable of being quickly assembled and locked in engagement with the rail.

A further object is to provide the base-plate with laterally-extending ears or lugs which bear against the fish-plates and serve to assist in locking the latter against longitudinal displacement as well as to retain the base-plate in position on the cross-ties.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability, and efficiency, as well as to reduce the cost of manufacture.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a rail-joint constructed in accordance with my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a bottom plan view of the base-plate detached. Fig. 4 is a transverse sectional view illustrating a modified form of the invention. Fig. 5 is a similar view illustrating a further modification; and Figs. 6 to 9, inclusive, are views illustrating further modifications.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved device is principally designed for connecting the mating ends of rail-

way-rails, and by way of illustration is shown applied to the mating ends of a pair of rails in which 5 designates the rails, 6 the cross-tie, and 7 and 8 the fish-plates. 55

The device consists of an elongated base-plate 9, having its lower face inclined or beveled from opposite edges thereof toward the longitudinal axis of the plate to produce inclined bearing-surfaces 10, there being a flat bearing-surface 11 disposed at the juncture of the inclined faces 10 for engagement with the cross-tie 6. 60

The opposite ends of the base-plate 9 are provided with laterally-extending locking-ears or lugs 12, which form additional bearing-surfaces for the base-plate and by engagement with the fish-plates 7 and 8 serve to lock the same against accidental displacement. The fish-plates 7 and 9 are each bent upon themselves, as indicated at 13, and extend inwardly in spaced relation to the plates to produce inwardly-extending arms 14, defining a pocket 15, for the reception of the base of the rail 5. The upper surfaces of the arms 14 are inclined or beveled at 16 to correspond to the inclination of the bearing-surfaces 10 of the base-plate, whereby when the fish-plates are positioned on the rail 5 with the inclined faces 16 thereof bearing against the correspondingly-inclined faces of the base-plate 9 the lower surfaces of the arms 14 are disposed in alinement with the flat surface 11 and thus prevent rocking or tilting movement of the rails. 75 80 85

In assembling the parts the base-plate 9 is first placed in position on the cross-tie, after which the fish-plates are arranged on opposite sides of the web of the rail with the inwardly-projecting arms extended beneath the base-plate 9 and the bolts or fastening devices 17 passed through the rail and fish-plates, respectively, and the latter spiked to the cross-tie in the usual manner. It will thus be seen that a strong durable rail-joint is provided, which will effectually resist both lateral and longitudinal strains incident to the passage of cars and other railway rolling-stock. 90 95 100

In Fig. 4 of the drawings there is illustrated a modified form of the invention in which the base of the rail is spaced from the base-plate 9 and fish-plates, respectively, to

form an intermediate recess for the reception of a yieldable packing, preferably formed of rubber or other suitable insulating material, thereby to deaden the sound of the passage of the cars over the rails.

In Fig. 5 of the drawings the arm 18 of the fish-plate 7 bears against the base of the rail 5, while the arm 19 of the fish-plate 8 overlaps the arm 18, the adjacent ends of the arms 18 and 19 being inclined or beveled, as indicated at 20. In this form of the device the fish-plates 7 and 8 are preferably provided with laterally-extending lugs 21, similar in construction to the lugs 12, so as to form additional bearing-surfaces for the fish-plates and thus prevent tilting movement of the rails.

The base 22 of the plate shown in Figs. 6 to 9, inclusive, is provided at its opposite longitudinal edges with overhanging lips or flanges 23, which receive the adjacent ends of the base of the rail 5 and form a seat for the latter. In this form of the device the base-plate 22 is provided on its under surfaces with a relatively broad flat bearing-surface 24 for engagement with the adjacent cross-tie, the inwardly-projecting arms 25 of the fish-plates 7' and 8' being relatively short and inclined or beveled to correspond to the inclination of the adjacent sides of the base-plate 22.

If desired, the base-plates in the several forms of the device may be made relatively short, so as to only span the rails 5 at their meeting ends, thus materially reducing the cost of the rail-joint. When the base-plates are made in short lengths, as before mentioned, the inwardly-extending arms of the fish-plates will be made of a length to engage the locking-lugs 12' on said base-plates, as will be readily understood.

If desired, a cushioning or packing may be used in connection with the rail-joints shown in Figs. 5 and 6, while the ends of the fish-plates instead of bearing against the adjacent faces of the locking-lugs 12 may be formed with terminal recesses 26 for the reception of the lugs 12', as illustrated in Figs. 7 and 9 of the drawings.

From the foregoing description it will be seen that there is provided an extremely simple, inexpensive, and efficient device admirably adapted for the attainment of the ends in view.

Having thus described the invention, what is claimed is—

1. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled from the opposite longitudinal edges thereof toward the center of the plate, fish-plates having laterally-projecting arms extending beneath the base-plate and having their terminals

inclined or beveled to correspond to the inclination of the lower surface of the base-plate, and lugs extending laterally from said base-plate in the same plane with the lower surface thereof and bearing against the opposite ends of the fish-plates for locking the latter against longitudinal movement.

2. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled in opposite directions, fish-plates provided with inwardly-projecting arms, the terminals of which are inclined to correspond to the inclination of the lower surface of the base-plate, lugs extending laterally from the opposite ends of the base-plate and adapted to engage the fish-plates for locking the latter against longitudinal movement, and a packing bearing against the rails and engaging the base-plate and fish-plates, respectively.

3. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled in opposite directions and provided with a flat bearing-surface at the juncture of said inclined faces, lugs extending laterally from the base-plate and disposed in the same plane with the flat bearing-surface of the base-plate, and fish-plates provided with inwardly-projecting arms the ends of which are beveled for engagement with the correspondingly-beveled faces of the base-plate, said fish-plates being locked against longitudinal movement by engagement with the lugs.

4. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled from the opposite longitudinal edges thereof toward the center of the plate, there being a flat bearing-surface disposed at the juncture of the inclined faces of said plate, lugs projecting laterally from the opposite ends of the base-plate and extending in the same plane with said plate, fish-plates engaging the rails and having their lower ends embracing the base of said rails and extending inwardly for engagement with the inclined faces of the base-plate, the terminals of said fish-plates being disposed in horizontal alinement with the flat bearing-surface of the base-plate and extended to said bearing-surface.

5. In a rail-joint, the combination with adjoining rail ends, of a base-plate having a smooth unobstructed upper surface and having its lower surface inclined or beveled in opposite directions, there being a flat bearing-surface disposed at the juncture of the inclined faces of said base-plate, fish-plates engaging the rails and provided with inwardly-projecting arms the ends of which are inclined to correspond to the inclination of the inclined faces of the base-plate, the terminals of said arms being disposed in hori-

zontal alinement with the flat bearing-surface of the base-plate and extended to said bearing-surface, and lugs extending laterally from the opposite ends of said base-plate and  
5 bearing against the adjacent ends of the fish-plate for locking the latter against longitudinal movement.

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

CHARLES H. STEPHENS.

Witnesses:

JOHN HAIRSTON,  
J. V. MORRIS.