

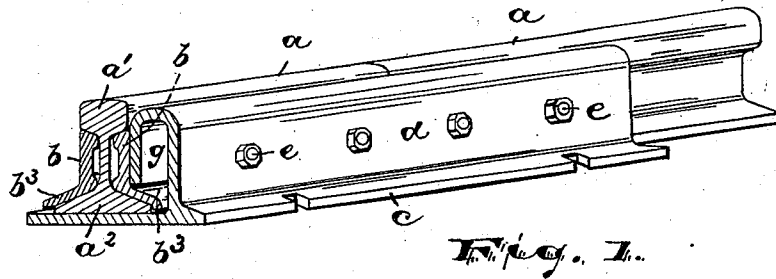
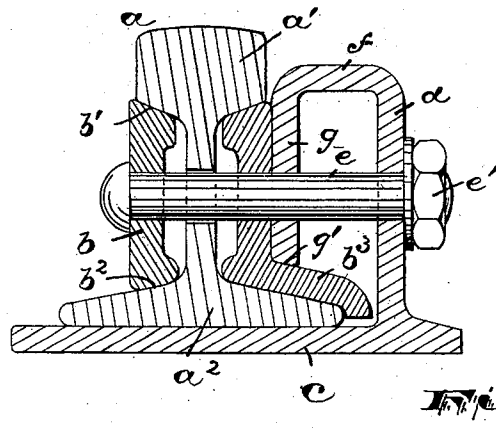
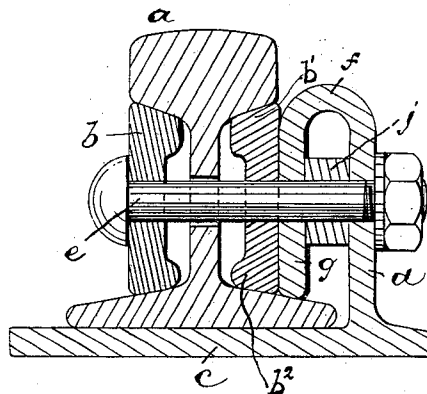
No. 727,902.

PATENTED MAY 12, 1903.

R. B. CHARLTON.
BASE PLATE FOR RAILWAY RAIL JOINTS.
APPLICATION FILED JAN. 27, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

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INVENTOR.

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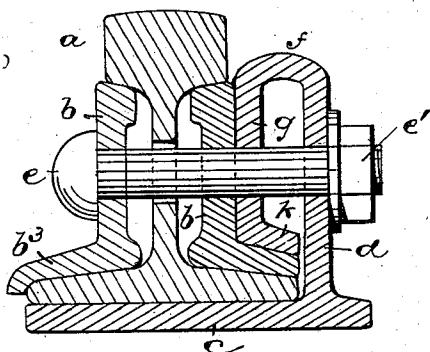


Fig. 4.

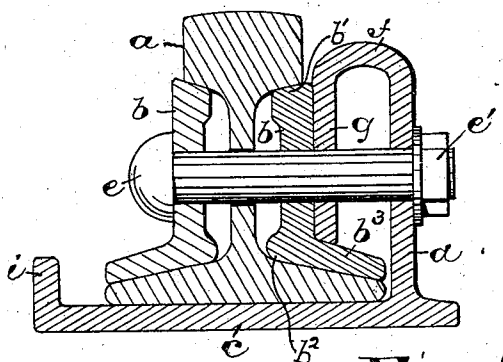


Fig. 6.

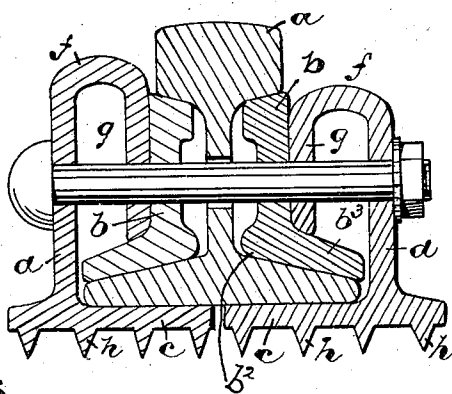


Fig. 5.

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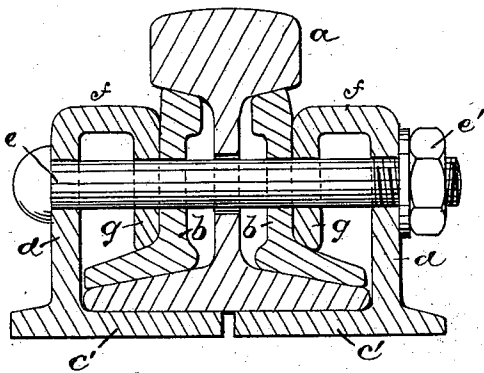


Fig. 10.

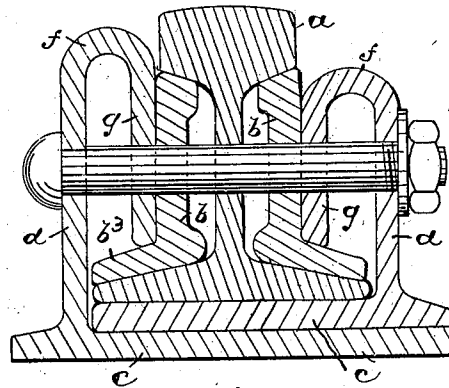


Fig. 9.

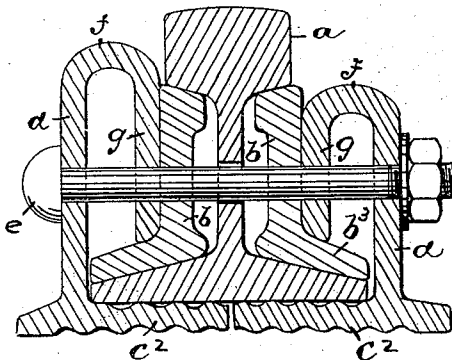


Fig. 8.

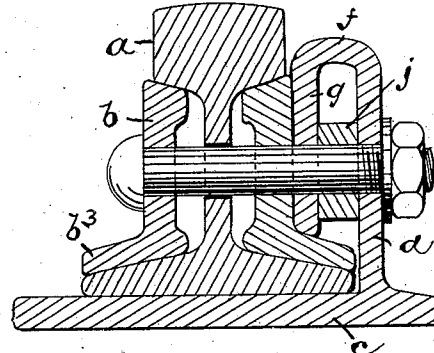


Fig. 11.

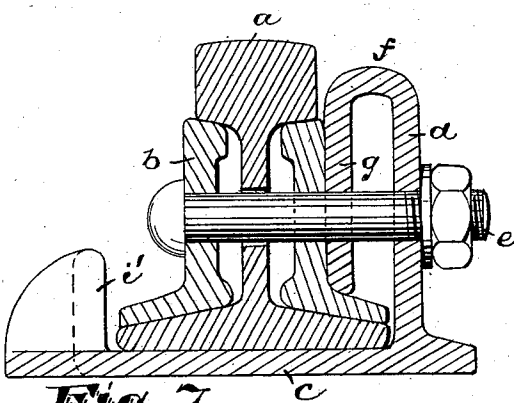


Fig. 7.

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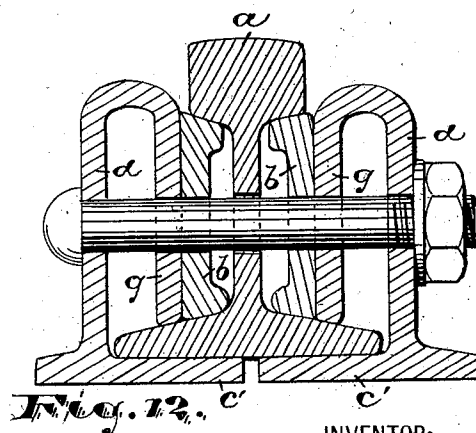


Fig. 12.

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UNITED STATES PATENT OFFICE.

RICHARD B. CHARLTON, OF MILWAUKEE, WISCONSIN.

BASE-PLATE FOR RAILWAY-RAIL JOINTS.

SPECIFICATION forming part of Letters Patent No. 727,902, dated May 12, 1903.

Application filed January 27, 1902. Serial No. 91,308. (No model.)

To all whom it may concern:

Be it known that I, RICHARD B. CHARLTON, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Base-Plates for Railway-Rail Joints; and I do hereby 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a base-plate for railway-rail-joints which shall be independent from the fish-plates and yet be adapted to be held in place by the same transverse bolts which bind said fish-plates to the opposite sides of the web of the rail, to secure an engagement of the base-plate at the top of the rail-flange, whereby it is bound firmly to the base of the rail, to obtain such a base-plate whose upward extensions to engage the top of the flange serve as girders or trusses to strengthen the joint, to obtain a construction which can be used with any fish-plates, to cushion the joint, afford a spring nut-lock, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved base-plate for railway-rail joints and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a perspective view of my improved base-plate as applied to a rail-joint, and Fig. 2 is a cross-section of the same. Fig. 3 shows a modification of construction adapted to another form of fish-plate and showing the returned portion of the upright extension free from the rail-head and held in fixed relation to said upright extension by a washer placed therebetween. Fig. 4 shows the extremity of the returned portion of the upright extension bent to engage said extension.

Fig. 5 shows the base-plate provided with downwardly-projecting longitudinal ribs. Fig. 6 illustrates a base-plate having a free edge at one side of the rails bent into vertical position to form a girder or truss, and Fig. 7 is a similar construction in which the girder is formed for only a portion of the length of the plate. Fig. 8 shows the base-plate corrugated for its portion underlying the rail ends. Fig. 9 shows two base-plates arranged at opposite sides of the rail ends and overlapping beneath said rail ends, and Figs. 10, 11, 12 illustrate other specific constructions of my invention.

In said drawings, *a a* indicate the meeting ends of two railway-rails, to the opposite sides of which fish-plates *b* have been applied, adapted to be secured in the usual manner by transverse bolts passing through the webs of the rails. Said fish-plates are preferably of a common type, comprising a plate adapted to lie parallel to the web of the rail at a little distance therefrom and wedge at its upper and lower edges *b' b''*, respectively, in between the head *a'* and base *a''* of the rails. An inclined foot member *b''* may or may not extend from the lower edge of the fish-plate downwardly outward upon the base-flange of the rail, as desired.

Coming now to that portion of the construction in which my invention more particularly inheres, *c* indicates a base-plate horizontally disposed beneath the rail ends and receiving the weight of the same and the passing trains. Said plate projects at one side edge from beneath the rails and is thereat provided with an integral upright extension *d* of a height sufficient to enable it to be perforated in alinement with the bolt-holes in the fish-plates and web of the rail, so that the bolts therefor can pass through all said parts and bind them firmly in position.

Of course between the upright extension of the base-plate and the adjacent fish-plate must be placed a stay of some sort, and it is preferable that said stay be arranged upon the transverse bolts *e* and adapted to crowd against the upper inclined surface of the rail-flange or foot member of the fish-plate, so as to draw the horizontal body portion of the base-plate tightly against the base of the rails. This stay I prefer to form by bending

the upright extension d , at a point above the bolts e , toward the rail, as at f , and then downward, as at g , to form a returned portion lying substantially parallel to the main portion d and flatwise against the fish-plate. This returned portion is perforated to permit the passage of the bolts e , and its lower end or extremity bears upon the inclined top of the rail-base flange or foot member of the fish-plate, as at g' . Thus as the transverse bolts are tightened the fish-plates are pressed oppositely against the sides of the rails and the base-plate is forced into close relation to the base of the rail and held there. Moreover, a resilient effect is secured by reason of the upright extensions e and their returned portions g , which serves to cushion the joint and prevent jarring as the wheels of a train pass from one rail to the other. Furthermore, the springiness of said parts act as a good and efficient nut-lock to prevent loosening of the nuts e' on the transverse bolts.

Only one base-plate may be used, as shown in Figs. 1, 2, 3, 4, 5, 6, 7, and 11, its horizontal body portion extending beneath the rail from side to side, and in this case the edge projecting at the opposite side of the rail from the upright extension d may be bent upward, as at i in Fig. 6, or upright trusses or girders i' may be bent upward out of the plate somewhat in from the edge, as in Fig. 7, whereby the plate is strengthened at that edge against downward strain. The upright extension d , it will be noted, serves as a similar truss or girder at the other edge.

If preferred, two base-plates can be employed at the opposite sides of a joint, their horizontal body portions overlapping beneath the rail, as in Fig. 9, or else being narrowed or cut off so as not to extend to the median line of the rail, and thus adapted to lie in the same plane without interfering with one another, as in Figs. 5, 8, 10, and 12. Longitudinal ribs h may be provided on the under surface of the base-plate, as in Fig. 5, to enable it to better engage the ties, or the horizontal body portion of the plate may be corrugated longitudinally, as at c^2 in Fig. 8, to prevent creeping.

The returned portion g of the upright extension d may be of different lengths, as shown, in some cases extending upward alongside the head of the rail and in others lying wholly below the top of the fish-plate, according to the degree of resiliency desired.

Under some conditions—as, for example, at curves in the railway—I may prefer to place between the upright extension d and its returned portion g washers or filling-blocks j , arranged on the bolts e , to secure greater rigidity, or the extreme end of the returned portion g may be bent toward the upright extension to engage the same at its tip, while bearing at its lower side against the inclined top of the rail-flange or foot member of the fish-plate, as shown at k in Fig. 4.

Having thus described the invention, what I claim as new is—

1. In a rail-joint, the combination with meeting rail ends and a fish-plate at the side thereof, of a connecting-plate comprising a horizontal member lying beneath the rails and an integral vertical member projecting upward at one side of the joint and being bent inwardly toward the rails and returned downward and engaging at its side the fish-plates, the free edge of said returned portion terminating short of the horizontal member of the connecting-plate and forming therewith a slot or narrow opening, and clamping-bolts.

2. In a rail-joint, the combination with meeting rail ends and a fish-plate between the bases and heads thereof and having a foot-flange extending outward upon the said bases, of a connecting-plate comprising a horizontal member lying beneath the rails and an integral vertical member projecting upward at one side of the joint and being bent inwardly toward the rail and returned downward and engaging at its side the fish-plate and at its free edges the top of the foot-flange of said fish-plate, and transverse clamping-bolts.

3. In a rail-joint, the combination with adjacent rail ends, and a fish-plate at the side thereof, of a base-plate having a body portion lying beneath the rails and an upward extension at the side of the joint bent inward toward the rail and returned downward and lying at said returned portion flatwise against the fish-plate, transverse clamping-bolts passed through said rails, fish-plate and upward extension and means between said upward extension and fish-plate for holding the same in proper relative position.

4. In a rail-joint, the combination with adjacent rail ends and a fish-plate at the side thereof, of a base-plate having a body portion extending beneath the base of the rails and an upward extension at one side of the joint having its upper portion returned or bent downward and engaging the fish-plate.

5. In a rail-joint, the combination with adjacent rail ends and a fish-plate at the side thereof, of a base-plate having a horizontal body portion extending beneath the rails and an upward extension at one side of the rails whose upper portion is returned or bent to lie flatwise against the side of the fish-plate.

6. The combination with a rail-joint having a fish-plate at the side thereof, of a base-plate having a horizontal body portion extending beneath the rail-joint and having an upward extension at one side thereof whose upper portion is returned or bent downward to lie side-wise against the fish-plate and whose edge forms a stop adapted to limit upward movement of the rail-base.

7. In a rail-joint, the combination with the meeting ends of rails and a fish-plate at the side thereof, of a base-plate having a body portion underlying the rails and an upward extension at one edge adapted to lie at a dis-

5 tance from the fish-plate, the upper portion of said extension being bent inward toward the rails and returned downward to lie next the fish-plate at a distance from the body of the extension, and a stay between said returned portion and body of the extension.

10 8. In a rail-joint, the combination with the meeting ends of rails and a fish-plate at the side thereof, of a base-plate having a body portion underlying the rails and an upward extension at one edge adapted to lie at a distance from the fish-plate, the upper portion of said extension being bent inward toward the rails and returned downward to lie next
15 the fish-plate at a distance from the body of the extension a transverse bolt passed through said rails, fish-plate and both body and returned portion of the base-plate extension, and a washer on said bolt, between the said
20 body and returned portion of the extension.

9. A rail-joint comprising fish-plates arranged on opposite sides of the meeting rail ends, a base-plate having a body portion lying beneath the rails and an upright extension at

one side edgelying away from the fish-plate on 25 that side and having its upper part returned or bent downward to lie between the fish-plate and lower part of the extension, said returned portion engaging the adjacent fish-plate, and bolts passed transversely through 30 the said fish-plates and upright extension and returned portion of the base-plate.

10. The combination with the meeting ends of two rails and fish-plates at the opposite sides thereof, of two base-plates one at each 35 side and each comprising a body portion lying beneath the rail and an upright extension at the outer edge extending upward at a distance from the adjacent fish-plate and being returned or bent inward and downward to en- 40 gage said fish-plate, and fastening-bolts.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of January, 1902.

RICHARD B. CHARLTON.

Witnesses:

M. E. CHRISTENSEN,

HUGH P. KAYE, Jr.