

No. 789,950.

PATENTED MAY 16, 1905.

B. WOLHAUPTER.  
RAIL JOINT.

APPLICATION FILED MAR. 2, 1905.

Fig. 1

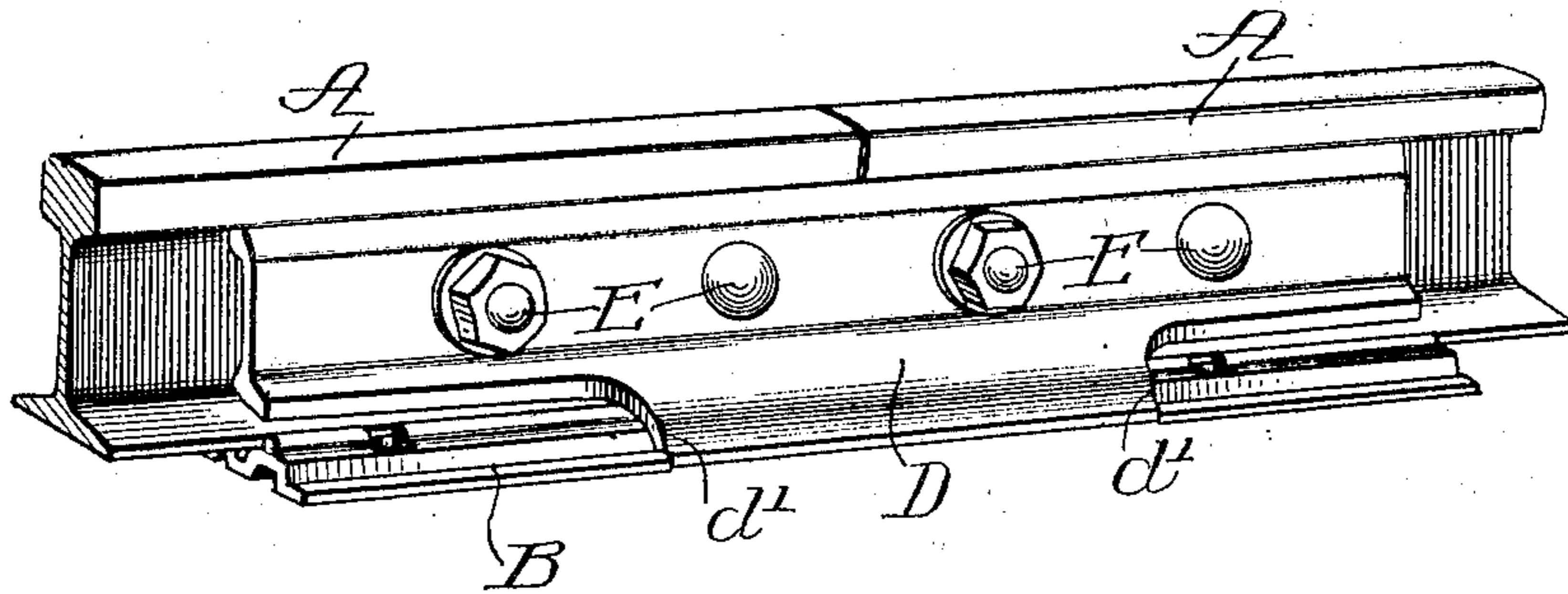


Fig. 2

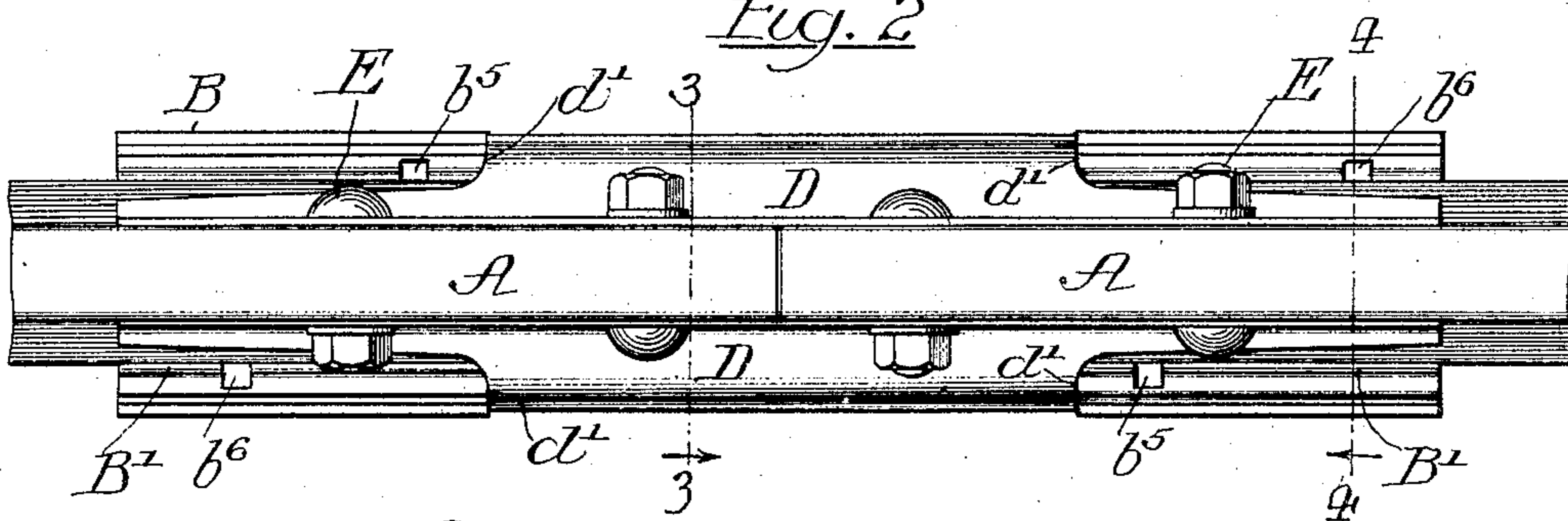


Fig. 3

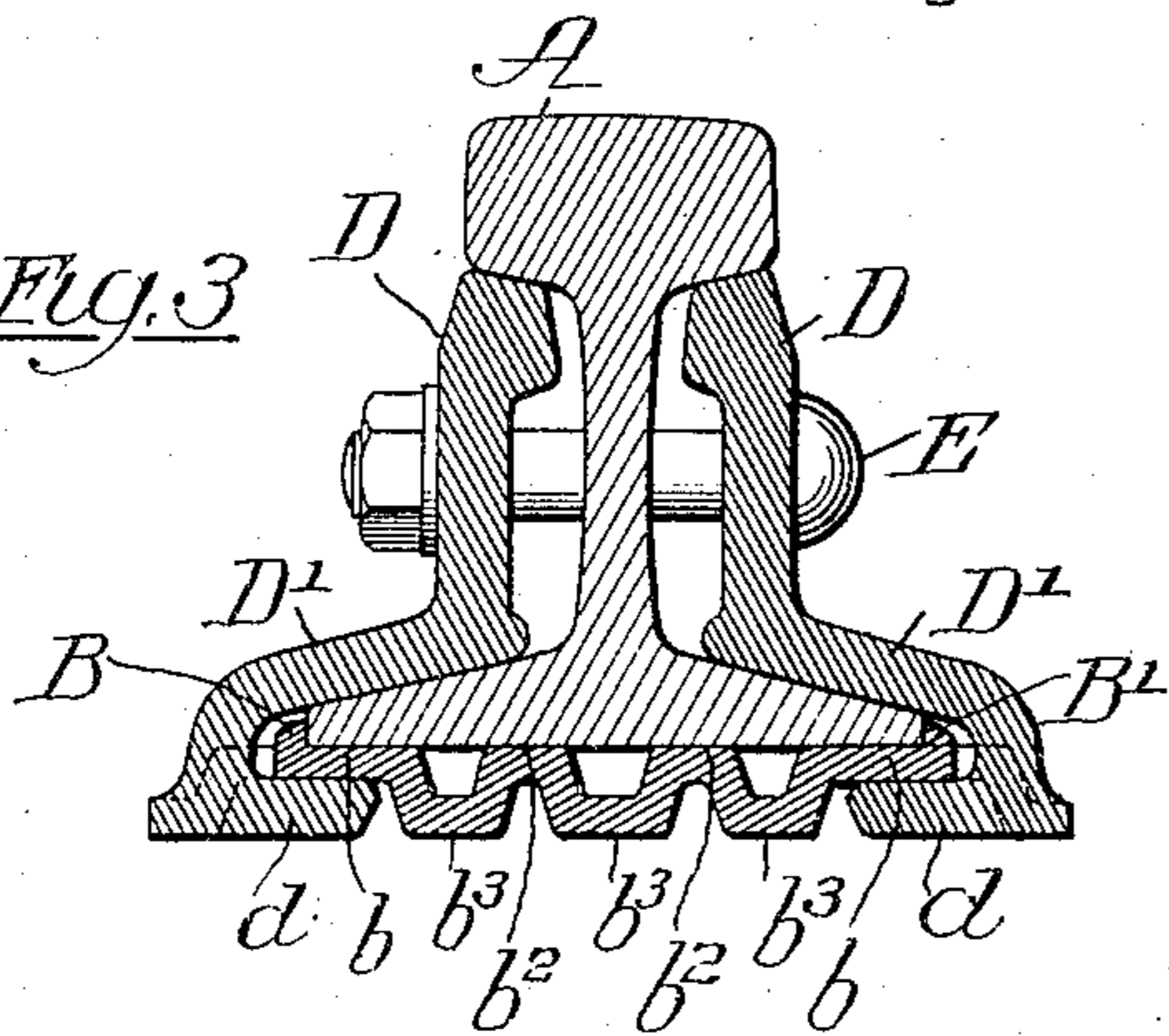


Fig. 4

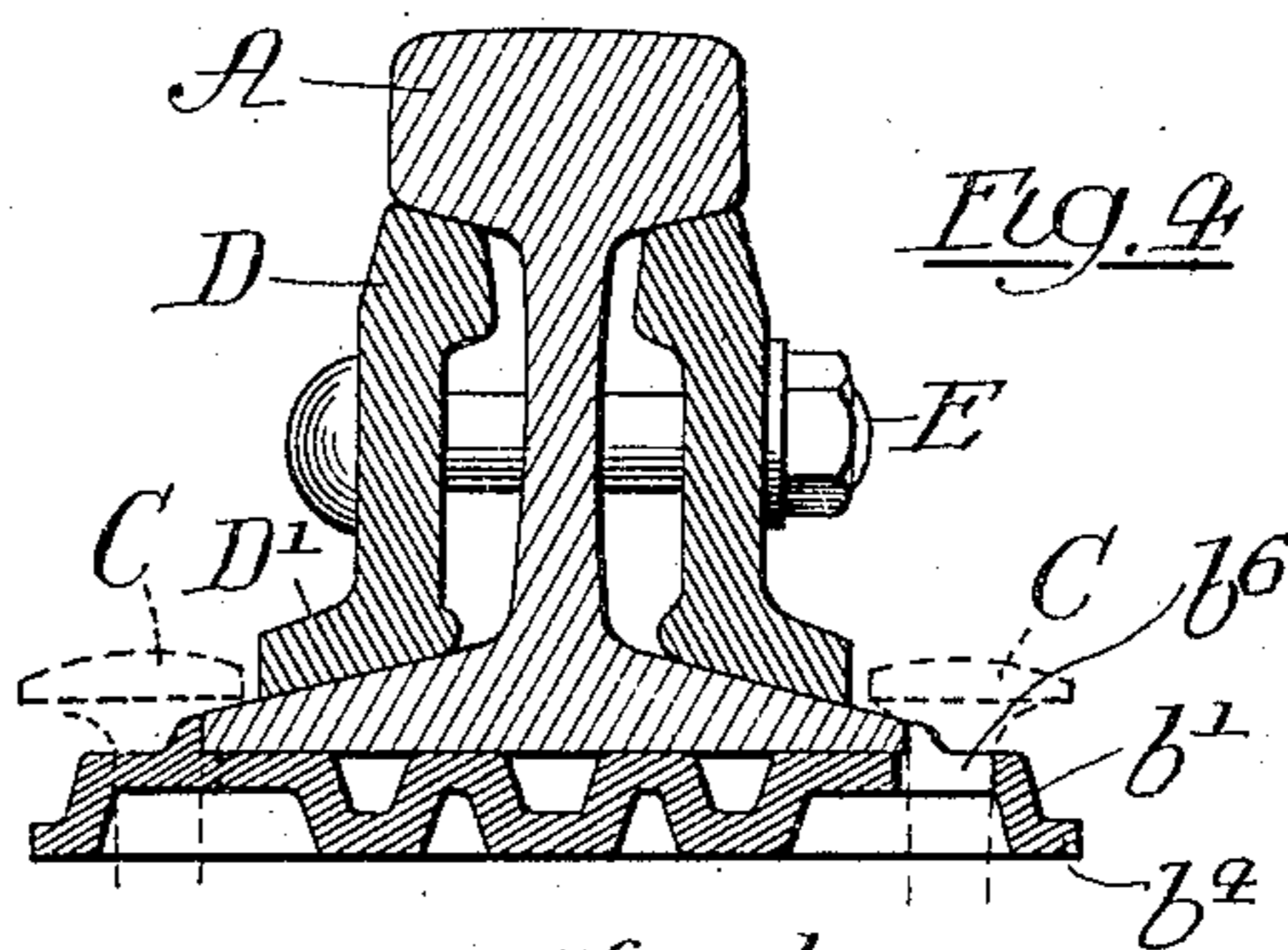
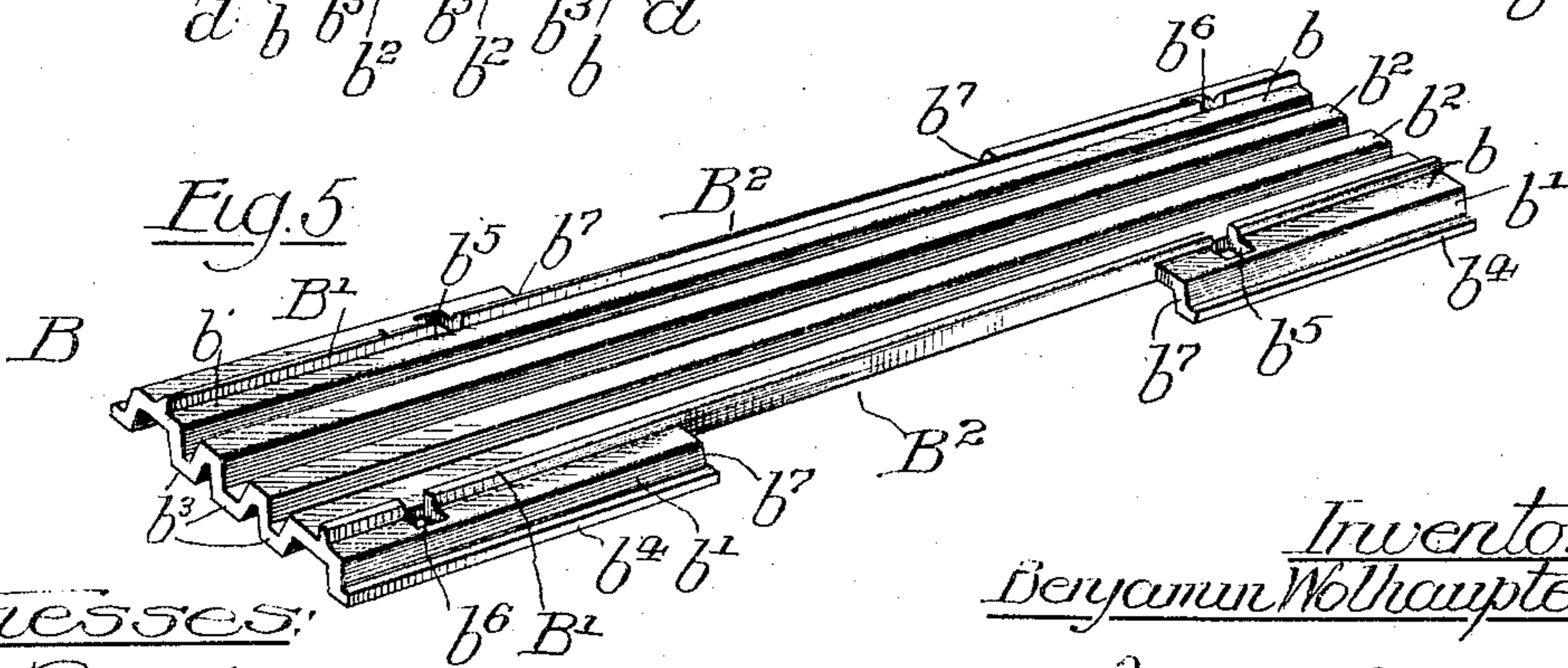


Fig. 5



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# UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF CHICAGO, ILLINOIS.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 789,950, dated May 16, 1905.

Application filed March 2, 1905. Serial No. 248,063.

*To all whom it may concern:*

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Joints; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved construction in rail-joints of that class having a supporting or base plate on which the ends of the rails rest and which is itself supported upon the ties, joint-bars which are clamped against the opposite sides of the rails by track-bolts and are provided with flanges which extend outwardly over the base-flanges of the rails and have interlocking engagement with the side margins of the base-plate.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

As shown in said drawings, Figure 1 is a perspective view of a rail-joint embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a cross-section taken upon line 3 3 of Fig. 2. Fig. 4 is a cross-section taken upon line 4 4 of Fig. 2. Fig. 5 is a perspective view of the base-plate.

As shown in said drawings, A A indicate the adjacent ends of two ordinary track-rails which are united by the joint, and B is a base-plate which is wider than the base-flanges of the rails and projects at both of its side margins outside of or beyond the side margins of said base-flanges. In the particular construction shown in the drawings said base-plate is made longitudinally corrugated in form for the purpose of giving stiffness to the plate and to afford elevated bearing-surfaces to support the rails and intermediate grooves or depressions to receive sand, grit, or cinders, and thereby prevent the retention of the same between the base-plate and the rails and consequent wearing away of the parts. Said base-plate, as shown in the drawings, is provided with flat elevated relatively wide marginal portions *b b*, which come beneath the side

margins of the base-flanges of the rails, and with intermediate corrugated portions forming a plurality of flat top bearing-surfaces *b<sup>2</sup> b<sup>2</sup>*, located in the same horizontal plane with the upper surface of the marginal parts *b* 55 and forming also flat bottom bearing-surfaces *b<sup>3</sup> b<sup>3</sup>*, which rest against the top surfaces of the ties on which the base-plate rests. Outside of the marginal elevated parts *b b* of the plate the side margins thereof are extended downwardly and then horizontally outward to form oblique parts *b' b'* and horizontal marginal flanges *b<sup>4</sup> b<sup>4</sup>*. The bottom surfaces of said horizontal flanges *b<sup>4</sup> b<sup>4</sup>* are in the same horizontal plane with the bearing-surfaces *b<sup>3</sup> b<sup>3</sup>* 65 and are adapted to also rest upon the ties.

On its elevated marginal parts *b b* the base-plate is provided with two longitudinal ribs *B' B'*, which form inwardly-facing shoulders adapted to bear against the side edges of the base-flanges of both of the rails. 70

At its end portions, near its side margins, the base-plate is provided with spike-holes *b<sup>5</sup> b<sup>5</sup>*, through which ordinary spikes C C, Fig. 4, may be driven into the ties on which the base-plate rests. Said spike-holes are so arranged that the spikes driven therethrough will bear against the opposite base-flanges of the rails, the same being cut through the longitudinal ribs *B' B'*. 80

D D indicate angle-bars which are alike for both sides of the rails and are arranged to fit at their upper margins against the under surfaces of the rail-heads and at their lower margins against the top surfaces of the base-flanges of the rails. Said angle-bars are clamped to the rail by the usual track-bolts E E. At their central parts the said angle-bars D D have the flanges at their lower margins, which extend outwardly over the base-flanges of the rails to form lateral extensions *D' D'*, which extend downwardly outside of the side margins of the said base-flanges and have their outer marginal parts *d d* directed horizontally inward, so as to extend beneath the adjacent marginal parts of the base-plate. 95 The side margins of said base-plate are provided with opposite elongated notches *B<sup>2</sup> B<sup>2</sup>*, extending along the central part of the plate, which is thus made narrower than the end 100

portions thereof. The marginal parts of the lateral flanges D' D' of the joint-bars enter or extend through the notches B<sup>2</sup> B<sup>2</sup>, and the inwardly-extending horizontal parts *d d* of said marginal flanges extend beneath the side margins of the narrower central part of the base-plate. In forming the notches B<sup>2</sup> B<sup>2</sup> the sides of the base-plate are cut away, so as to remove the downwardly and outwardly extending parts *b'* and *b<sup>4</sup>* thereof. The horizontal parts *d d* of the lateral flange extensions D' D' are thereby adapted to enter beneath the said elevated marginal parts *b b* of the base-plate, and said horizontal parts are preferably made of such thickness that their bottom surfaces are flush with the bottom or bearing surface of the base-plate. The notches B<sup>2</sup> B<sup>2</sup> in the sides of the base-plate are, moreover, made of the same length as the marginal parts of the lateral extensions D' D', so that the end surfaces *d' d'* of the latter abut against or meet the shoulders *b' b'*, formed at the ends of the said notches B<sup>2</sup> B<sup>2</sup>. This construction affords an interlocking connection between the two joint bars and the base-plate, preventing any relative endwise movement thereof.

The angle-bars D D, as shown and preferably constructed, at the end portions thereof will have the flanges at their lower edges which extend outward over the base-flanges of the rails cut away or narrowed, so that the outer edges of said flanges will be inside of the side margins of the said base-flanges of the rails to expose the side margins of the end portions of the base-plate, thereby permitting the spikes to be driven therethrough in contact with the margins of the rail-flanges. This flanged construction in the said joint-bars gives the same greater strength and rigidity than would be the case if the same were provided with lateral flanges D' D' at their central portions only.

The making of the base-plate with two ribs B' B', adapted to engage opposite sides of the rail-base, is not essential, as a rib on the outer side of said base-plate will afford a suitable longitudinal shoulder on the base-plate to resist the lateral outward pressure coming upon the rails. A construction in which the base-plate is provided with two of such ribs B' B' is preferred, however, because making the base-plate alike on both sides, and therefore reversible.

An advantage gained by the construction hereinbefore described is that the joint-plates D and D are alike for the inner and outer sides of the rails and are therefore interchangeable. It follows that in a rail-joint made as described the joint-plates are all alike and may be used indiscriminately for the inner and outer faces of the joints, so that no care or attention is required on the part of the track-layers in applying the joint-plates.

Another advantage arising from the construction described is that the base-plate be-

ing exposed at the side margins of both of its ends at both sides of the rail-base holding-spikes may be driven through or in contact therewith in such manner that the spike-heads directly engage the rail-flanges or the base-plate itself, and the spikes will when driven project a less distance above the ties and will therefore more strongly hold the parts from lateral movement on the ties than would be the case when the spike-heads engage the angle-bars. Moreover, in the construction illustrated the rails are restrained from outward movement on the base-plate by the longitudinal shoulder formed by the outer rib B' thereon, and said rails are therefore strongly and reliably held from shifting or moving outward under the lateral stresses coming thereon, the spikes at the inner sides of the rails serving to hold the base-plate from outward movement by engagement with the outer margins of the spike-holes therein. The spikes at the outer sides of the rails when used also aid to hold said rails from moving or shifting outwardly through their direct engagement with their base-flanges.

An important advantage is gained by providing the base-plate at its central part with elevated marginal parts, beneath which extend the horizontal inwardly-extending marginal flanges on the angle-bars, for the reason that by this construction the bottom surfaces of the said horizontal flanges may be made flush with the bottom surface of the base-plate, which bears on the ties, it being usually desirable that the ends of said horizontal flanges should overlap to a greater or less extent the two adjacent ties on which the end portions of the base-plate rest.

An important advantage gained by the construction described, in which both of the joint-bars are provided with lateral central flanges engaging at their ends central notches in the side margins of the base-plate, is that both of the joint-bars are thereby interlocked with the base-plate in a manner to hold said joint-bars and the rails from endwise movement relatively to or upon said base-plate.

I claim as my invention—

1. The combination with track-rails, of a base-plate provided on its upper surface at its outer side margin with a longitudinal, inwardly-facing shoulder against which bear the edges of the rail-flanges; said base-plate being wider than the base-flanges of the rails and provided near its inner margin, at its end portions, with spike-holes and two angle-bars which are clamped against the opposite sides of the rails and the flanges of which, at the central parts thereof, are provided with lateral extensions having marginal, inwardly-directed, horizontal flanges adapted to extend beneath the side margins of the said base-plate; the flanges of said angle-plates, at the end portions thereof, having their outer margins located inside of the side margins of the said

base-flanges of the rails so as to leave exposed or uncovered the side margins of the end portions of the base-plate.

2. The combination with track-rails, of a base-plate provided on its upper surface, at its outer end margin, with an inwardly-facing longitudinal shoulder against which bear the edges of the rail-flanges, the said base-plate being wider than the base-flanges of the rails and provided near its inner margin, at its end portions, with spike-holes, and two angle-bars which are clamped against the opposite sides of the rails and the flanges of which, at the central parts thereof, are provided with lateral extensions having marginal inwardly-directed, horizontal flanges adapted to extend beneath the side margins of the said base-plate, the flanges of said angle-plates, at the end portions thereof, having their outer margins located inside of the side margins of the rails so as to leave exposed or uncovered the spike-holes in the end portions of the base-plate, and said base-plate being narrower at its central part than at its ends, and provided at the ends of its narrower central portion with inwardly-facing transverse shoulders engaging the ends of the said lateral extensions of the flanges on the angle-bars.

3. The combination with track-rails, of a base-plate wider than the base-flanges of the rails and provided, near its inner margins, at its end portions, with spike-holes, and two angle-bars which are clamped against the opposite sides of the rails and the flanges of which, at the central part thereof, are provided with lateral extensions having marginal inwardly-directed, horizontal flanges adapted to extend beneath the side margins of the said base-plate, and said base-plate being narrower at its central part than at its ends, and having the side margins of its narrower central portion, which are engaged by said horizontal, inwardly-extending flanges on the an-

gle-bars, elevated above the bottom surface of the base-plate.

4. The combination with track-rails, of a base-plate wider than the base-flanges of the rails and having lateral, elevated horizontal parts, the outer margins of which, at the end portions of the base-plate, are extended outwardly and downwardly to rest upon the ties, and two angle-bars clamped against the opposite sides of the rails; and the flanges of said angle-bars, at the central parts thereof, being extended outwardly over the base-flanges of the rails, and provided with inwardly-extending horizontal flanges which extend beneath and engage the said lateral, elevated parts of the said base-plate.

5. The combination with track-rails, of a base-plate provided on its upper surface with a longitudinal, inwardly-facing shoulder against which bear the edges of the rail-flanges; the said base-plate being wider than the base-flanges of the rails and having lateral, elevated, horizontal parts provided with spike-holes; and the outer margins of which, at the end portions of the base-plate, are extended outwardly and downwardly to rest upon the ties, and two angle-bars clamped against the opposite sides of the rails; and the flanges of said angle-bars, at the central parts thereof, being extended outwardly over the base-flanges of the rails and provided with inwardly-extending horizontal flanges which extend beneath and engage the said lateral, elevated parts of the said base-plate.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 24th day of February, A. D. 1905.

BENJAMIN WOLHAUPTER.

Witnesses:

C. CLARENCE POOLE,  
G. R. VILKINS.