

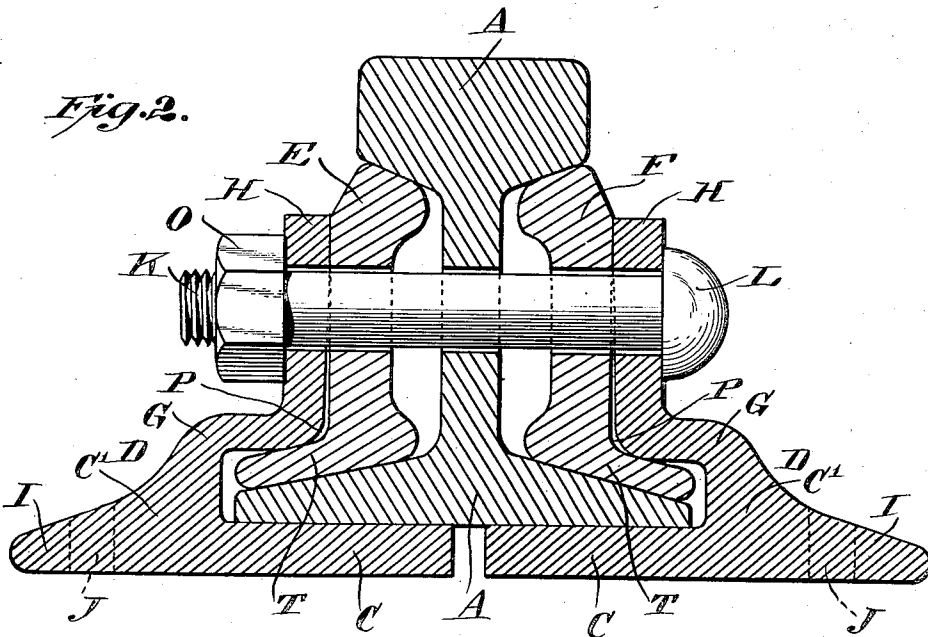
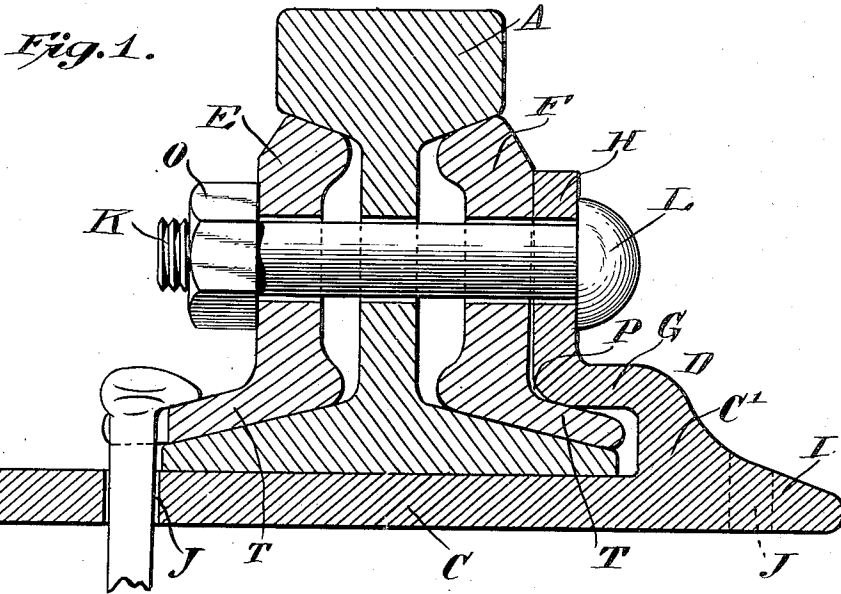
No. 817,824.

PATENTED APR. 17, 1906.

G. A. WEBER,
RAIL JOINT.

APPLICATION FILED JUNE 24, 1905.

3 SHEETS—SHEET 1.



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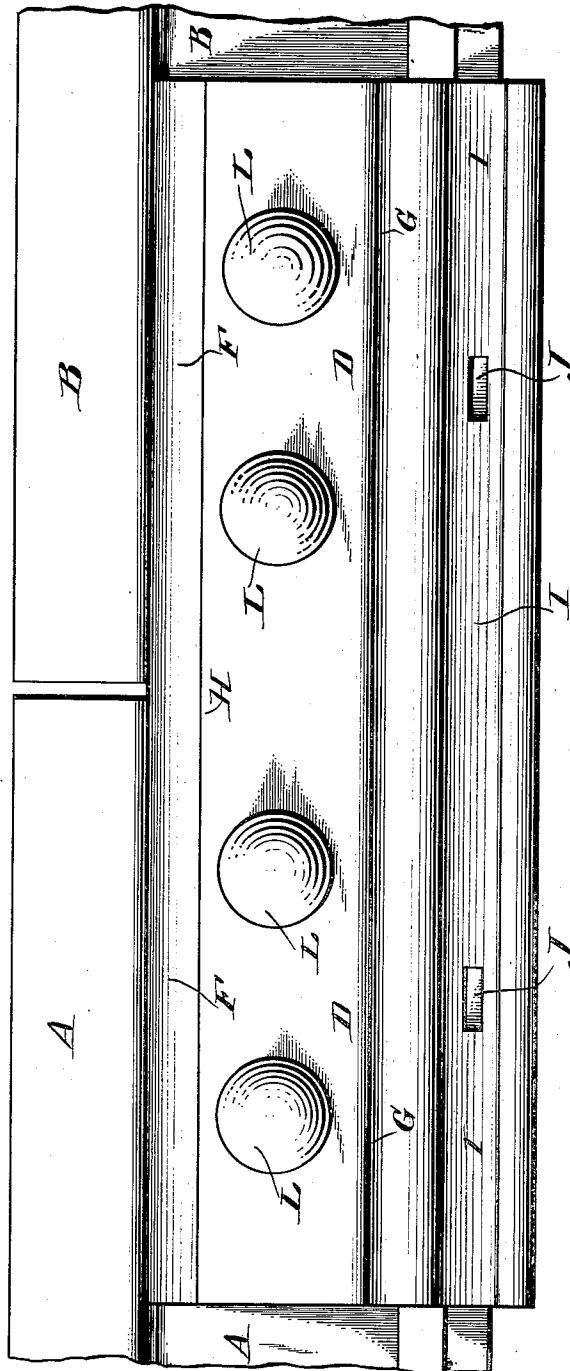


Fig. 3.

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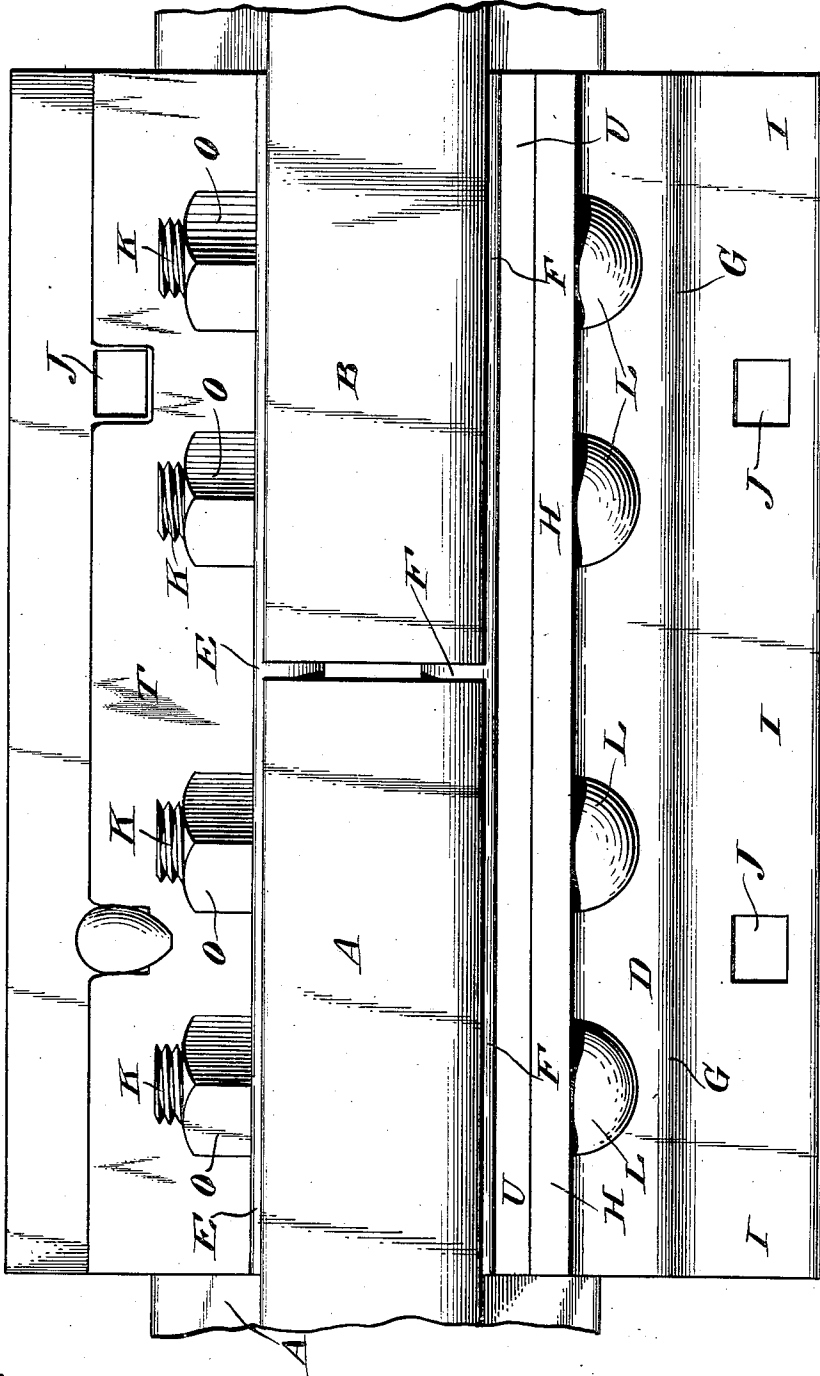
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3 SHEETS—SHEET 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE A. WEBER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE RAIL JOINT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

RAIL-JOINT.

No. 817,824.

Specification of Letters Patent.

Patented April 17, 1906.

Original application filed March 31, 1905, Serial No. 253,122. Divided and this application filed June 24, 1905. Serial No. 266,707.

To all whom it may concern:

Be it known that I, GEORGE A. WEBER, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification accompanied by drawings.

This invention relates to rail-joints; and one of its objects is to hold the rails in position under the passage of a train and prevent the rail ends from moving upward when the wheels are passing from one rail to another.

Another object of the invention is to secure a firm downward hold upon the base-flanges of the rails.

This application is a division of my co-pending application, Serial No. 253,122, filed March 31, 1905, for a rail-joint, for which division was required.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a rail-joint for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts having the general mode of operation substantially as herein-after fully described and claimed in this specification and shown in the accompanying drawings, in which —

Figure 1 is a transverse sectional view of a rail-joint embodying the invention having one rail-chair. Fig. 2 is a transverse sectional view of a joint having two rail-chairs. Fig. 3 is a side elevation of the joint, and Fig. 4 is a top plan view of the joint shown in Fig. 1.

Referring the drawings, A and B represent the meeting ends of rails resting upon the base C of the rail-chair D. Extending across the joint at each side of the rails are side bars, in this instance shown in the form of angle-bars E and F, the edge of the flange or lower leg of the angle-bar E extending substantially to the edge of the rail-flange or beyond in the usual manner a sufficient distance so that a spike may be placed through slots in said projecting edge.

The rail-chair D is provided with an upwardly, inwardly, and again upwardly bent portion, the upright portion forming a bolt-plate. As shown, the first upwardly-bent portion is indicated at C'. The inwardly-bent portion is indicated by G. The nose or

spiking-rib I is provided with spiking-holes J, which may be in the form of slots.

Extending through the webs of the rails, the angle-plates E and F, and the upright H are bolts K, having heads L and nuts O.

The inwardly-turned portion G of the chair is shown bearing upon the flange T of the angle-bar F, while the upright H of the chair bears against the outer face of the angle-bar.

As shown, there is a slight clearance P between the inner face of the upright H of the chair and outer face of the angle-bar F, so that when the joint is tightened up the upright will be drawn firmly against the angle-bar. The act of drawing the upright H against the angle-bar also insures a snug fit between the under side of the inwardly-turned portion G and the upper surface of the flange of the angle-bar. As shown in the drawings, only a portion of the under side of the inwardly-turned portion G bears upon the flange of the angle-bar where such portion is over the flange of the angle-bar. When the joint is tightened, a strong upward pressure is obtained beneath the heads of the rails and a strong downward pressure upon the bases.

In forming the rail-chair with the inwardly and upwardly bent portion it will be seen that the bend which extends up and around from the base C of the chair is prolonged in a vertical direction, forming a substantially straight portion at the point C', which is preferably longer or higher than the combined height of the edges of the rail-base and the angle-bar flange. The object in so constructing the rail-chair with an enlarged and thickened portion at the first bend above the base is to strengthen the chair and provide a girder effect. It will be seen that the portion C' referred to acts as an additional girder portion in the chair. A clearance is also provided at the bend for the entrance of the smaller end of the rail-flanges and the flanges of the angle-bar. One of the great advantages of providing clearance P between the outer face of the angle-bar and the upright of the chair resides in the fact that inequalities in rolling the flanges of the rails or angle-bars is taken care of by the compensating fit afforded between the lower portion of the upright of the chair and the angle-bar. If the rail-flanges or flanges of the angle-bars are either thicker

or thinner than required, or if the space between the base of the chair and the inwardly-turned portion is larger or smaller than required, due to inequalities in rolling, these differences are taken care of and compensated for by the construction of the chair, which adjusts itself to the parts when the joint is tightened. The clearance-space between the lower portion of the outer face of the angle-bar may be entirely eliminated on tightening up the parts, and the chair will adjust itself against the angle-bar as the bolts are tightened.

According to the construction shown and described a base-support is provided in each case for the rails, with an angle-bar at one side of the joint and a chair having an inwardly and upwardly bent portion at the other side of the joint, forming a bolt-plate. The bent portion of the chair is of sufficient strength in each case to hold the rails down.

According to this invention there are three bearing-surfaces in the shoe-angle at which it is desired to obtain a good fit—that is, under the bases of the rails, on top of the outwardly-extending flange of the angle-plate, and against the face of the angle-bar.

Obviously some features of this invention may be used without others, and the invention may be embodied in widely-varying forms.

Therefore, without limiting the invention to the devices shown and described and without enumerating equivalents, I claim and desire to obtain by Letters Patent the following:

1. A rail-joint comprising the rails and side bars, said side bars having outwardly-extending lower flanges, a rail-chair having a base underneath the rail and an inwardly and upwardly bent portion forming a bolt-plate, adapted to bear against the outer surface of one side bar and upon the upper surface of the lower flange of said side bar, and bolts for securing the parts of the joint together.

2. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, an inwardly and upwardly bent portion, the inwardly-bent portion of which is adapted to bear for a portion of its length only upon the upper surface of the base-flanges of the angle-bars where such length is over the flanges, while the upwardly-bent portion is adapted to bear against the outer portion of one angle-bar, and suitable bolts for securing the parts of the joint together.

3. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion, a compensating fit being provided between the outer portion

of one angle-bar and the upwardly-bent portion of the rail-chair, said chair being adapted to bear upon the flange of the angle-bar and suitable bolts for securing the parts of the joint together.

4. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, and an inwardly and upwardly bent portion, the inwardly-bent portion of the chair being adapted to bear for a portion of its length only upon the upper surface of the base-flange of the angle-bar, where said length is over said flange, while clearance is provided between the lower portion of the angle-bar and the upwardly-bent portion of the chair to provide a compensating fit whereby when the joint is tightened a fit over the flange of the angle-bar and against the outer surface of said bar is insured.

5. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion adapted to bear upon the upper surface of the base-flange of one angle-bar and against the outer portion of one side of said bar, the rail-chair being provided with a heightened or prolonged bend in a vertical direction adjacent the base of the rail, thereby affording increased strength.

6. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion, the rail-chair also being provided with a thickened and vertically-extended portion between the base of the chair and the inwardly-bent portion to provide increased strength, and the inwardly-turned portion of the chair being adapted to bear upon the flange of one angle-bar.

7. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, inwardly and upwardly bent portions, the inwardly-bent portions of which are adapted to bear for portions of their lengths only upon the upper surfaces of the base-flanges of the angle-bars, where such length is over the flanges, while the upwardly-bent portions are adapted to bear against the outer portions of the angle-bars, and suitable bolts for securing the parts of the joint together.

8. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, a compensating fit being provided between the

outer portions of the angle-bars and the upwardly-bent portions of the rail-chairs, said chairs being adapted to bear upon the flanges of the angle-bars and suitable bolts for securing the parts of the joint together.

9. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, and inwardly and upwardly bent portions, the inwardly-bent portions of the chairs being adapted to bear for portions of their lengths only upon the upper surfaces of the base-flanges of the angle-bars, where said lengths are over said flanges, while clearance is provided between the lower portions of the angle-bars and the upwardly-bent portions of the chairs to provide a compensating fit whereby when the joint is tightened a fit over the flanges of the angle-bars and against the outer surface of said bars is insured.

10. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions adapted to bear upon the upper surfaces of the base-flanges of the angle-bars and against the outer portions of one side of said bars, the rail-chairs being provided with heightened or prolonged bends in a vertical direction adjacent the base of the rail, thereby affording increased strength.

11. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, the rail-chairs also being provided with thickened and vertically-extended portions between the bases of the chairs and the inwardly-bent portions to provide increased strength, and the inwardly-turned portions of the chair be-

ing adapted to bear upon the flanges of the angle-bars.

12. A rail-joint comprising the rails and a rail-chair, angle-bars at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion adapted to bear upon the upper surface of the base-flange of one angle-bar and against the outer portion of said angle-bar, the inwardly-turned portion of the chair being integrally connected to the base by an upwardly-extended portion.

13. A rail-joint comprising the rails and rail-chairs, angle-bars at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions adapted to bear upon the upper surfaces of the base-flanges of the angle-bars and against the outer portions of said angle-bars, the inwardly-turned portions of the chairs being integrally connected to the base by upwardly-extended portions.

14. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, an upwardly, inwardly and again upwardly bent portion, the inwardly-bent portion of which is adapted to bear for a portion of its length only upon the upper surface of the base-flanges of the angle-bars, where such length is over said flange, while the upwardly-bent portion is adapted to bear against the outer portion of one side bar, and suitable bolts for securing the parts of the joint together.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE A. WEBER.

Witnesses:

E. P. LA GAY,
A. L. O'BRIEN.