

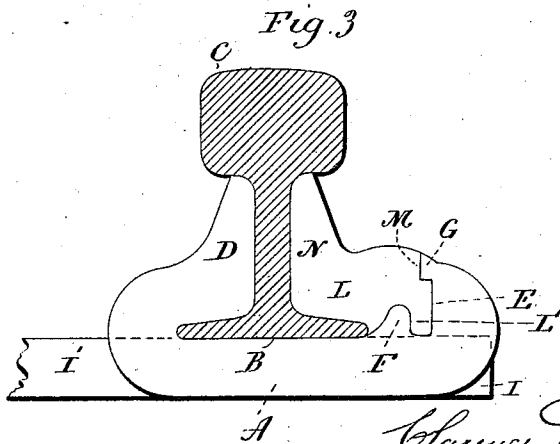
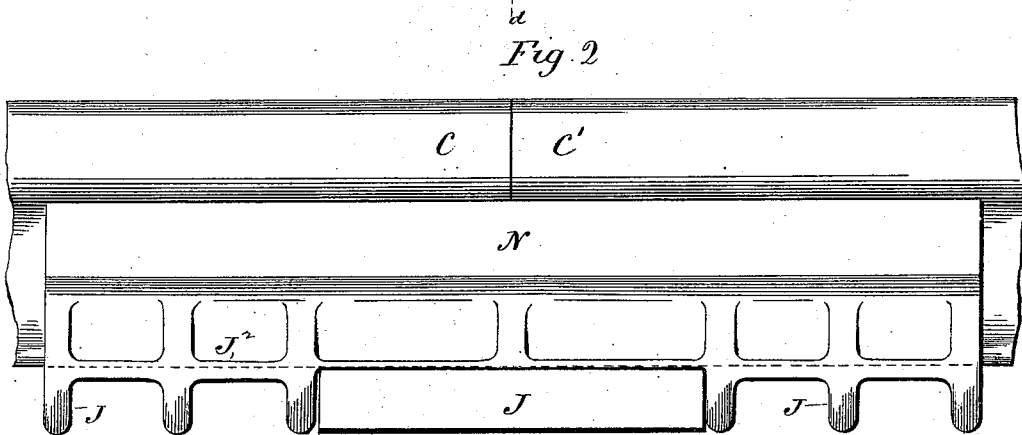
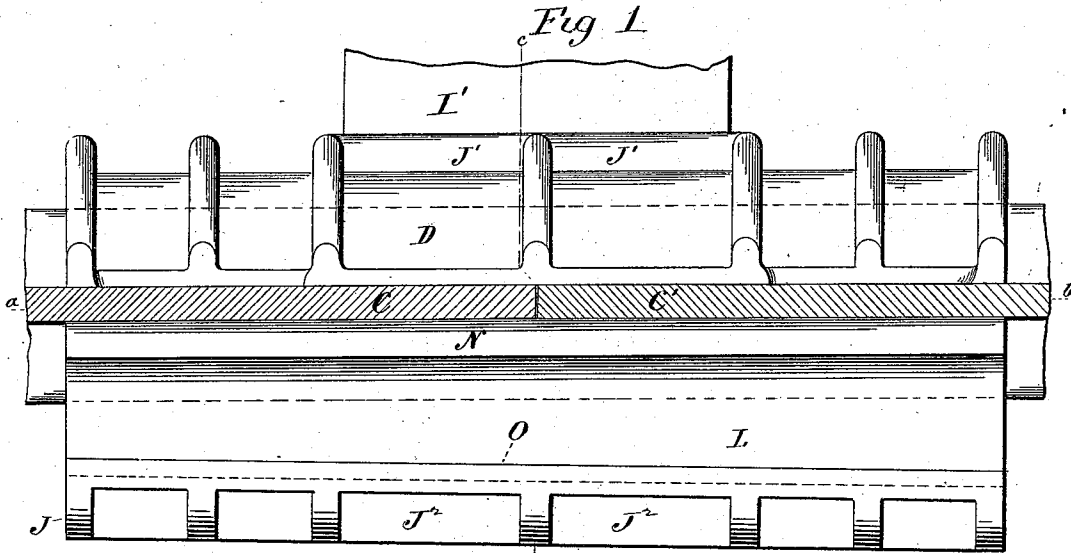
(No Model.)

3 Sheets—Sheet 1.

C. L. WHEELER.  
RAIL JOINT.

No. 512,781.

Patented Jan. 16, 1894.



Witnesses,  
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By atty. *Inventor.*  
Earle & Symons

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Fig. 4

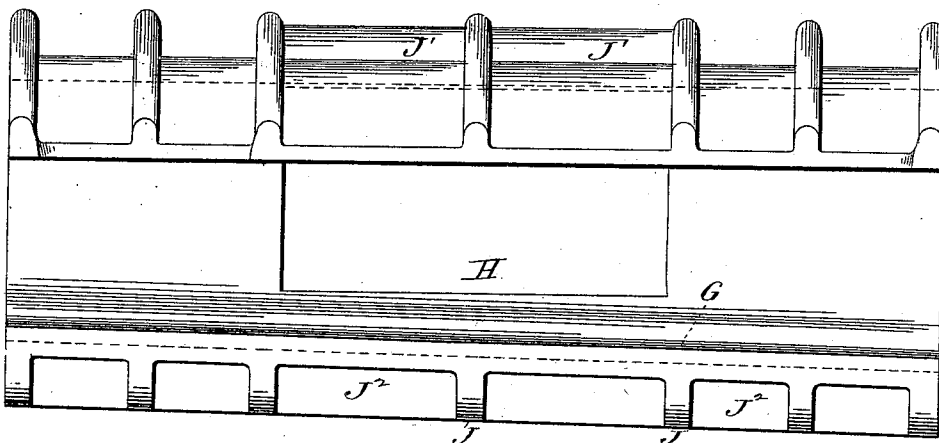


Fig. 5

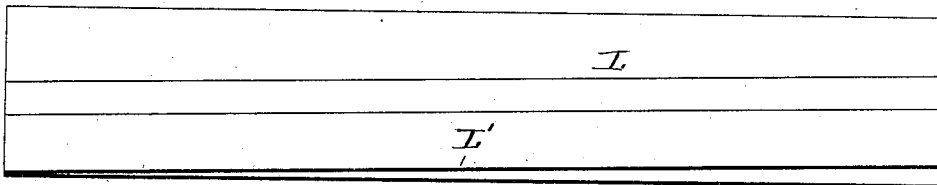
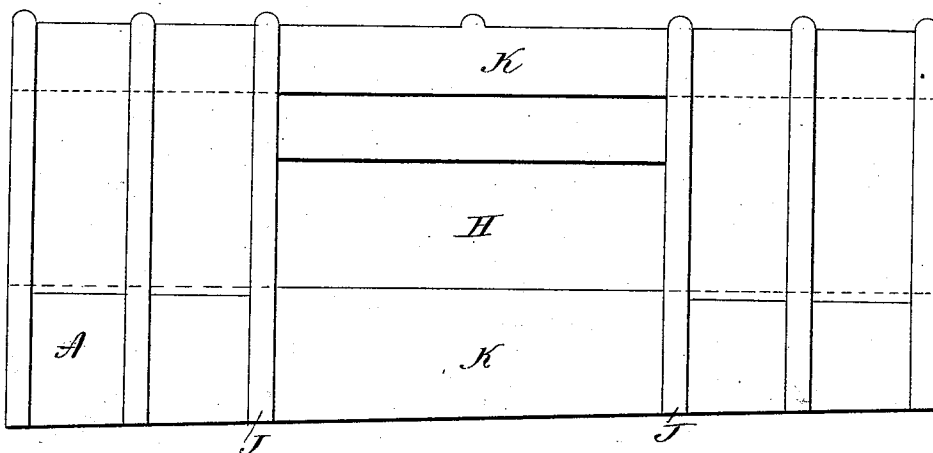


Fig. 6



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(No Model.)

3 Sheets—Sheet 3.

C. L. WHEELER.  
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Fig. 7

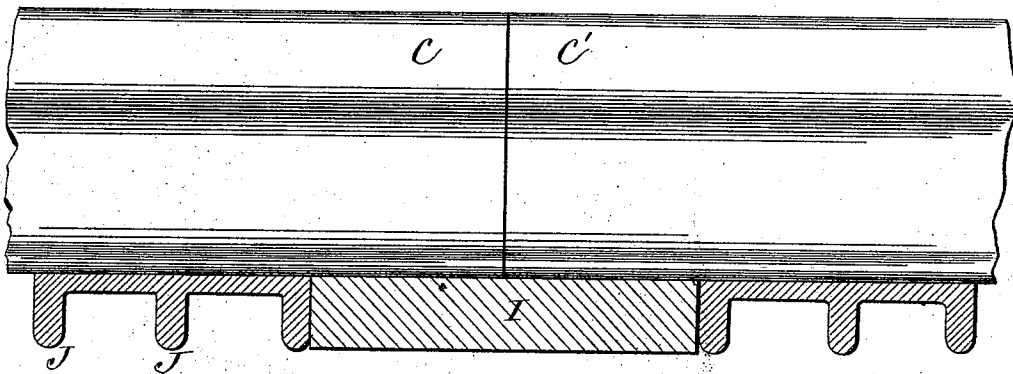
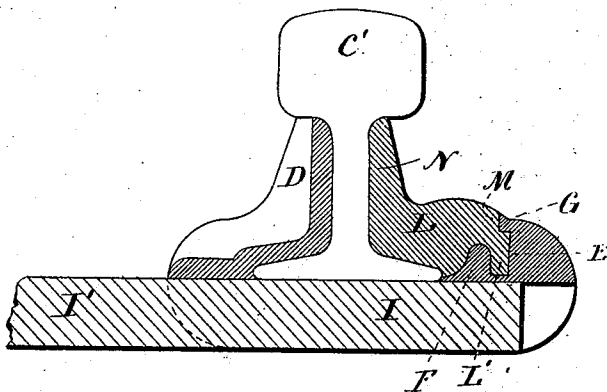


Fig. 8



Witnesses  
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# UNITED STATES PATENT OFFICE.

CLARENCE L. WHEELER, OF MARION, INDIANA.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 512,781, dated January 16, 1894.

Application filed May 1, 1893. Serial No. 472,486. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE L. WHEELER, of Marion, in the county of Grant and State of Indiana, have invented a new Improvement in Rail-Joints, (Case C); and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of a rail-joint constructed in accordance with my invention, the rail-ends which it joins being shown in section; Fig. 2, a view of the joint in side elevation; Fig. 3, an end view of the joint; Fig. 4, a detached plan view of the chair of the joint; Fig. 5, an outside edge view of the draw-clamp of the joint; Fig. 6, a detached reverse plan view of the chair of the joint; Fig. 7, a view of the joint in longitudinal section, on the line *a-b* of Fig. 1; Fig. 8, a view of the joint in transverse section on the line *c-d* of the same figure.

My invention relates to an improvement in rail-joints, and more particularly to a joint designed for use in the construction of cable-roads in which the two lines of rails are joined together and spaced by iron ties, slightly bowed, and called girders or yokes, the object being to produce a simple and effective joint, adapted to be attached to the ends of the said yokes, and requiring little or no attention after having been placed.

With these ends in view, my invention consists in certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, I construct a chair A, which will preferably be two or three times as long as it is wide. This chair has a solid or jointless longitudinal seat B, which in part supports the rail-ends C C'. One side of the chair is constructed with a flange D, having the combined function of a clamp and compression truss, as will be hereinafter described, extending throughout the length of the chair, and inward over the seat thereof, so as to bear upon the beveled upper faces of the adjacent edges of the bases of the rail-ends, and also to bear against the adjacent faces of the webs of the rail-ends. In

order to secure the effect just mentioned, the lower portion of the bearing face of the flange is inclined so as to be nearly horizontal, while its upper portion is made to stand in a vertical plane, and adapted in height to rise to the under face of the top of the rail. On the opposite side of the chair from the flange D, it is constructed with a groove E, arranged vertically, an abutment rib F, located between the groove and the seat B of the chair, and a locking-rib G, located directly above the outer wall of the said groove. The chair is further constructed with a yoke-opening H, which intersects its seat A about midway the length thereof, and is adapted to receive the end I, of the yoke I', in such a manner that the upper face of the said end of the yoke will be flush with the said seat, whereby the yoke will take part of the load in carrying the rail-ends, the extremities of which rest upon it. For the purpose of reinforcing the chair, it is constructed with a series of transverse ribs J, of which, as herein shown, it has seven, three at each end, and one in the middle. These ribs begin at the upper edge of the flange D, of the chair, and extend down under and around the same, terminating in the locking rib G, thereof. On the side of the chair having the flange D, the three middle ribs are joined together by a longitudinal rib J', while on the opposite side of the chair the transverse ribs are joined together by a virtually continuous longitudinal rib J<sup>2</sup>. All of these ribs give stiffness to the chair, without materially increasing it in weight, or requiring much more stock. The middle rib is cut away upon its lower face, so as not to obstruct the application of the chair to the end I of the yoke or girder I', the chair being provided midway of its length and upon its lower face with a transverse flat bearing-face K, which is intersected by the opening H. The ribs J, flanking the said bearing-face at its ends, receive the end of the yoke between them, and prevent the chair from lateral displacement thereupon.

With the chair above described, I employ a draw-clamp L, having a rib L' formed upon its outer edge, and adapted to enter the groove E, formed in the chair, as set forth. The outer edge of the clamp is also constructed with a longitudinal rabbet M, adapted to re-

ceive the locking-rib G. The said clamp is adapted to fit over the entire beveled faces of the adjacent edges of the rail-ends, and constructed with a combined flange and compression truss N, corresponding to the flange D, of the chair, and adapted to impinge against the adjacent faces of the webs of the rail-ends. The chair and clamp are constructed and arranged so that when the latter is applied to the former, it will be positively drawn inward, and downward, so as to take up all play, and clamp the rail-ends rigidly in the joint. Provision for causing the clamp to draw inward and downward as described, may be made in various ways. As herein shown, I construct the outer edge O, of the clamp on an incline, so that a plan view of the clamp shows it to be tapered from end to end. To co-operate with the inclined wall O of the clamp, I construct the inner edge of the locking-rib G of the chair with a corresponding inclination, whereby the opening formed in the upper face of the chair to receive the clamp, appears tapering in a plan view of the chair. The co-operation of the inclined edge O of the clamp, and the inclined rib G of the chair, causes the clamp to be positively moved inward as it is slid or driven into place on the chair. To cause it to be positively moved downward, the lower edge of its vertical rib L', is inclined, as shown by Fig. 5 of the drawings. When therefore the clamp is driven home, it will be positively moved inwardly and downwardly, so as to move the rail-ends in the chair, and take up all play therein, whereby the rail-ends are firmly clamped in place, and held, not only by direct pressure upon their webs, but also by downward pressure upon their bases. When the clamp is driven into place, it is prevented from being forced or rolled outward by the resistance which it meets by the abutment of its rib L', against the abutment rib F, of the chair, and also by the coaction of the locking-rib G of the chair with the rabbet M, of the clamp, the primary function, however, of the locking rib G, being to prevent the clamp from lifting up. The clamping action of the clamp, as thus constructed and arranged, is so powerful that when the clamp has once been driven home, it will stay in place, and require no further attention.

I have already mentioned that the rail-ends rest upon, in part, the ends of the girders or yokes, provision thereto being made by forming an opening in the bottom of the chair, intersecting the seat formed therein for the rail-ends. It will thus be seen that the ends of the chair projecting on either side of the end of the yoke, form virtually suspended joints

for the rail-ends, being adapted thereto by being so amply reinforced by ribs, as described.

The flanges of the chair and of the draw-clamp not only act as clamps to grip the rail-ends by their webs, but also as compression-trusses, for being located above the bottom of the chair, they take and resist downward pressure tending to bend the same longitudinally from above. In this way the flanges perform important service as compression trusses.

It is obvious that in constructing rail-joints in accordance with my invention, the details herein shown and described for the chair and clamp may be varied, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cable-road rail-joint, having a chair provided with a solid or jointless seat for the rail-ends to rest upon, and constructed with an opening intersecting the said seat from below to receive an end of a yoke or girder; in combination with a draw-clamp adapted to be applied to the upper face of the chair, substantially as described.

2. A cable-road rail-joint, having a chair provided with a longitudinal seat intersected from below by an opening adapted to receive an end of a yoke or girder, and constructed with a flange overhanging the said seat on one side thereof; in combination with a draw-clamp adapted to be applied to the opposite side of the chair, and constructed to be positively drawn inward and downward, substantially as described.

3. A cable-road rail-joint, having a chair provided with a solid or jointless seat intersected from below by an opening to receive one end of a yoke or girder, and provided with a flange overhanging the seat from one side thereof, and constructed with transverse and longitudinal ribs for reinforcing it; in combination with a draw-clamp adapted to be applied to the chair on the opposite side of its seat, substantially as described.

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

CLARENCE L. WHEELER.

Witnesses:

ROBINSON H. WHEELER,  
E. STERNE WHEELER.