2 Sheets—Sheet 1.

C. LEWIS.
Rail-Joint.

No. 206,337. **Patented July 23, 1878.**

Fig. 1.

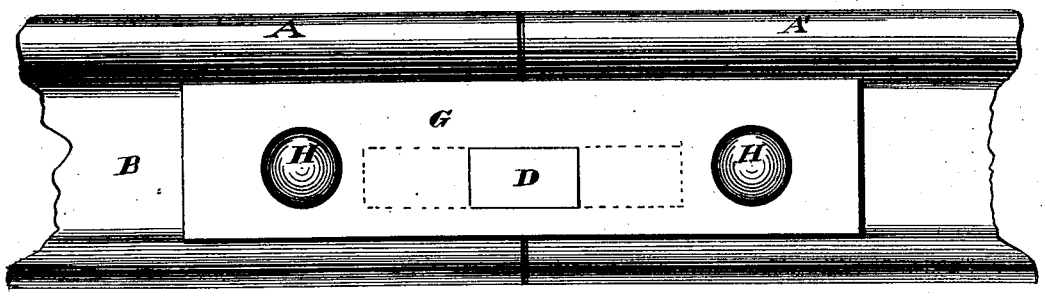


Fig. 2.

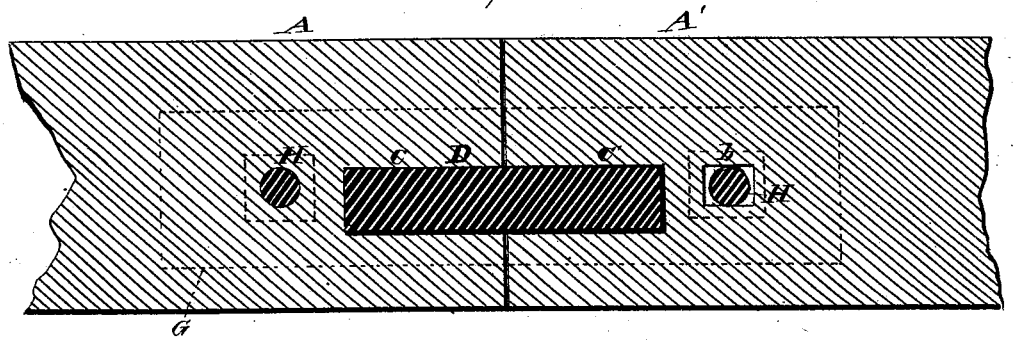
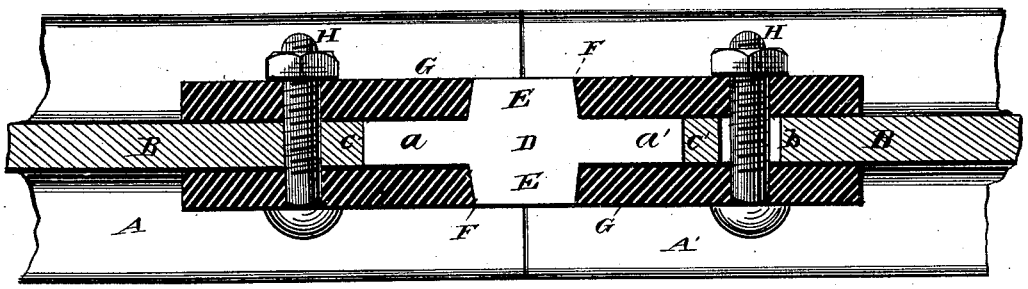


Fig. 3.



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2 Sheets—Sheet 2.

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Fig. 4.

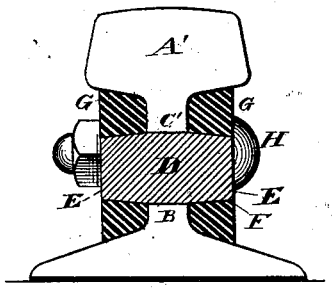
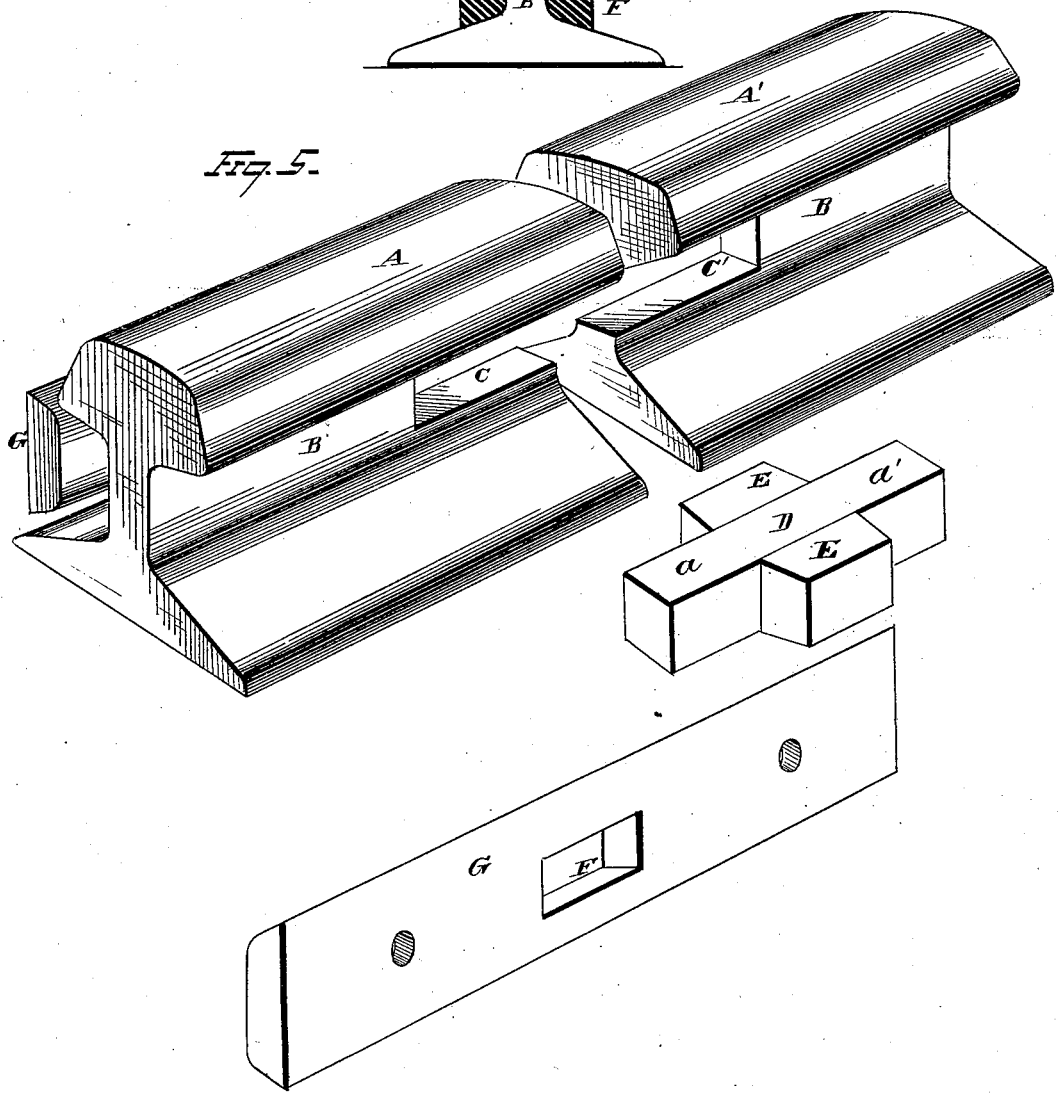


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHRISTOPHER LEWIS, OF COLUMBUS, OHIO.

IMPROVEMENT IN RAIL-JOINTS.

Specification forming part of Letters Patent No. **206,337**, dated July 23, 1878; application filed April 23, 1878.

To all whom it may concern:

Be it known that I, CHRISTOPHER LEWIS, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Railway-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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in railway-joints; the object being to provide a joint of such construction that a continuous and even bearing for the treads of car-wheels shall be formed at the adjacent or meeting ends of the rails, and thus prevent the pounding or battering of the rail ends and jolting of the cars incident to the employment of the ordinary construction of railway-joints.

Heretofore the web portions of two adjacent rails have been formed with elongated slots or openings, within which was placed a plate, the edges of which projected slightly from the sides of the webs and fitted within grooves formed on the inner faces of the splice-bars. The splice-bars were secured in place by means of bolts extending through enlarged openings formed in the web portions on opposite ends of the supporting-plate.

My invention consists in the combination, with the adjacent ends of two rails having elongated slots or openings formed in their web portions, of a removable supporting-plate provided with lateral bearings, which project through openings formed in the splice-bars, and extend out flush with the outer surfaces of said bars, and suitable bolts extending through separate openings in the opposite ends of the splice-bars, whereby the supporting-plate imparts a support to the joint equal in width to the thickness of the web and both splice-bars, and the latter are secured to the rails at any desired distance from the ends thereof, irrespective of the length of the supporting-plate.

In the accompanying drawings, Figure 1 is a side elevation of my improved railway-joint. Fig. 2 is a longitudinal vertical section, and Fig. 3 a longitudinal horizontal section, of the same. Fig. 4 is a cross-section taken through the center of the supporting-bar, and Fig. 5 is a detached view of the several parts of the joint.

A A′ represent the adjacent ends of two main rails of a track. The webs B have rectangular openings C C′ formed therein for the reception of a supporting-bar, D, of Greek-cross form, the ends *a a′* of which are supported in the openings C C′. The end portions *a a′* are of the same thickness as the webs of the rails, so that the outer surfaces of said supporting-bar, when in place, shall be flush with the web surfaces of the rails. The central portion of the supporting-bar D is provided with lateral bearings E, which are supported in correspondingly-shaped openings F, formed in the splice-bars G. Bolts H extend through the ends of the splice-bars and through the webs of the rails. Sufficient longitudinal movement of the rails to allow for the contraction and expansion of the rails is provided for by making one of the bolt-holes *b* in the web of the rail of rectangular or oblong form, whereby the rails may have a limited endwise movement, as above specified. Splice-bars G fit snugly against the webs of the rails, and have a firm bearing beneath the tread and upon the flanges of the rails. As the car-wheel reaches the extreme end of the rail the weight of the car will be supported, not only by the rail on which the wheel is located, but also by the adjacent rail, as the weight is transferred to the opposite rail by means of the supporting-bar, which has a firm bearing in the adjacent ends of both of the rails, and also by the splice-bars, which overlap the rail-joints, and constitute a firm bearing for the lateral projection of the supporting-bar at a point between the ends of the rails.

It will be observed that all the several parts of the joint can be manufactured by rolling, and hence can be supplied to the trade at a small initial cost.

When it is desired to renew a splice-bar or a rail the parts composing the joint can be readily separated by simply removing the bolts which hold the splice-bars in place.

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

The combination, with the adjacent ends of

two rails, the same having longitudinal openings formed in their web portions, of a supporting-bar of Greek-cross form, the ends *a a'* of which are equal in width to that of the webs of the rails in which they rest, while the sides E E project through the splice-bars, the ends thereof being flush with the outer surfaces of said splice-bars, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

CHRISTOPHER LEWIS.

Witnesses:
FRANK GALT,
JNO. D. PATTEN.