

(No Model.)

C. B. LYON.  
RAIL JOINT.

No. 421,950.

Patented Feb. 25, 1890.

Fig. 1.

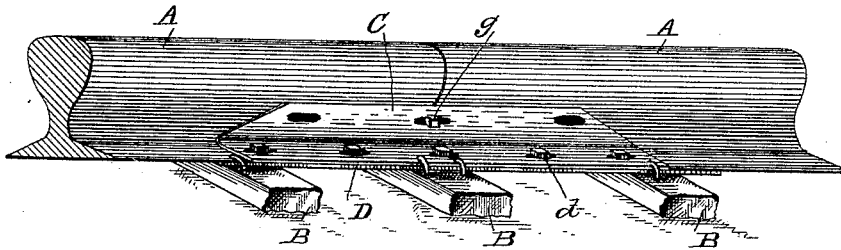


Fig. 2.

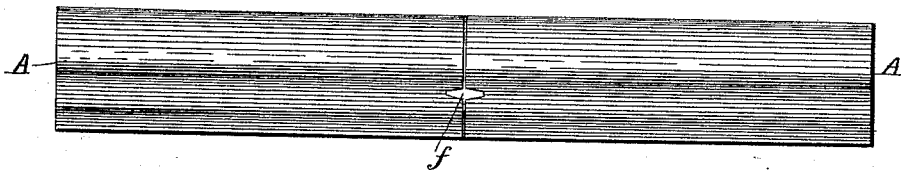
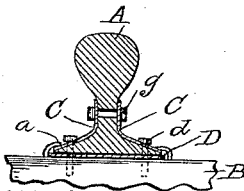


Fig. 4.



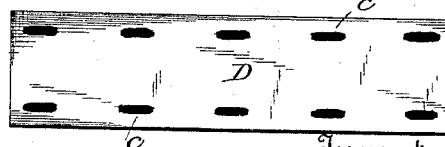
Fig. 3.



Witnesses

Joseph Blackwood.  
Albert B. Blackwood

Fig. 5.



Inventor  
CHARLES BURTON LYON

By his Attorneys Smith & Lacey

# UNITED STATES PATENT OFFICE.

CHARLES BURTON LYON, OF NEW YORK, N. Y.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 421,950, dated February 25, 1890.

Application filed December 5, 1889. Serial No. 332,662. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES BURTON LYON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Rail-Joints; and I do 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.

My invention relates to certain new and useful improvements in rail-joints.

The nature of the invention will be understood from the following description when taken in connection with the accompanying drawings, in which latter—

Figure 1 is a view in perspective of two rails with my improvements in place; Fig. 2, an elevation of the rails with the jointing device removed; Fig. 3, a cross-section through Fig. 1; Fig. 4, a detail of an angle-iron used, and Fig. 5 a detail of a sub-plate.

In the drawings, A A represent two rails, those shown being of the style known as "pear-head;" but it will be understood that any form of rail to which my invention is applicable may be used.

B represents the cross-ties, C angle-irons, and D sub-plates. Each sub-plate D is placed upon the cross-ties in such a position that it will extend under the ends of the two rails. The base or flange of the rail, the sub-plate, and the horizontal flange of the angle-iron are provided with a series of elongated slots *a b c*, respectively, such slots being of the form shown in the drawings, in which they are represented as being enlarged at their centers and tapering toward both ends. The slots *a b c* are arranged to register, and through the openings thus formed bolts *d* are passed, securing the parts named upon the cross-ties.

In practice I have found it desirable to place an angle-iron upon each side of the rails at their point of meeting, each such angle-iron being so placed that it will extend beyond the ends of both rails. The vertical flange of each angle-iron is arranged to press against the sides of the rails and to occupy a

position that will bring its upper edge directly beneath the top projection of the rail.

Heretofore when fish-plates have been employed it has been customary to provide them with a series of bolt-holes, and also to bore a similar number of holes through the rails; but it has been found that this arrangement serves to greatly weaken the rails and cause their breakage, and to obviate this I provide each angle-iron with an elongated opening *e*, similar in form to the openings *a b c*, hereinbefore referred to, and so situated as to bring it (when the angle-irons are in position) directly in line with the point where the ends of the rails meet; and, further, instead of boring openings through the rails, I notch the end of each rail, as at *f*, the notches thus provided being of such a form that when the rails are brought together they will register and form an opening similar in form to the openings before described. Through the openings *e f* thus provided I pass a single bolt *g*, of sufficient strength to hold the parts securely in place.

In the manufacture of my angle-irons other openings may be formed in the vertical flange, if desired, such openings being provided in order that bolts may be passed therethrough and through the rails, if desired.

The bolts described as holding the parts together are formed with square shanks and rounded ends, the square shank being provided in order that the bolt may be held in place while the nut is being screwed on.

The particular form of slots with which I provide the rails, angle-irons, and sub-plates serves to hold the parts securely in place, and, while allowing for the necessary expansion and contraction of the parts, always bind the bolts.

The use of a joint such as herein described will serve to prevent all rattling of the parts and at the same time hold them securely in place.

My device is adapted in whole or in part to other forms of rails and plates than those shown.

What I claim is—

The combination, with the rails slotted in

the web at the ends thereof only, of the base-  
plate and the angle-plates properly slotted to  
allow for expansion and contraction, the said  
base and angle plates united by bolts passing  
5 through the bases of the rails, the said angle-  
plates being also united by the single bolt  
passing through the slot at the abutting ends  
of the rails, substantially as set forth.

In testimony whereof I affix my signature  
in presence of two witnesses.

CHARLES BURTON LYON.

Witnesses:

M. J. CLAGETT,  
MYER COHEN.