

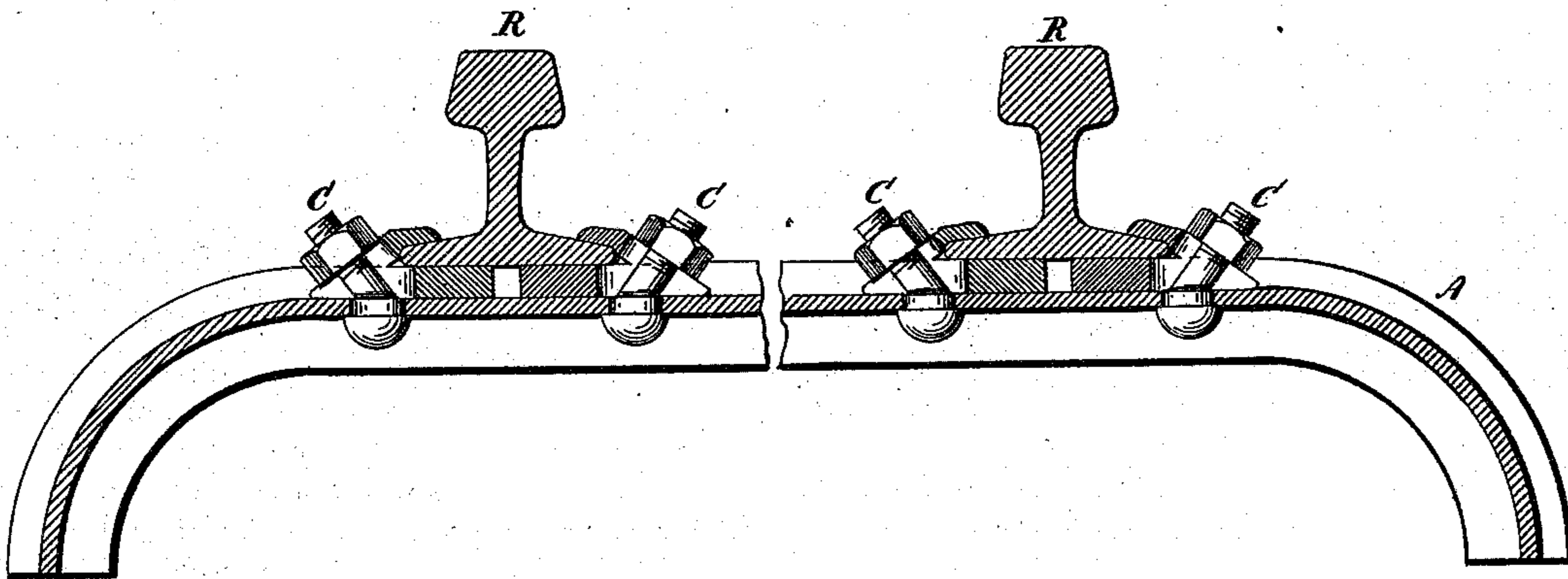
(No Model.)

A. J. HARTFORD.  
METALLIC RAILROAD TIE.

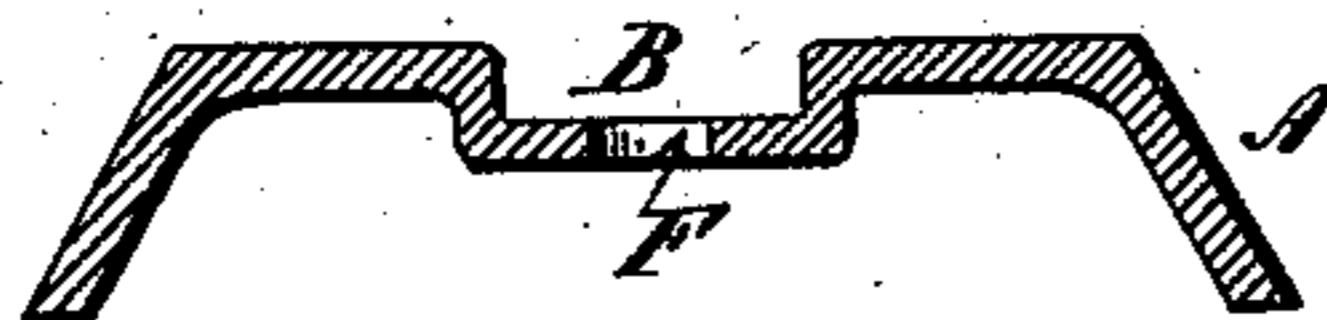
No. 401,949.

Patented Apr. 23, 1889.

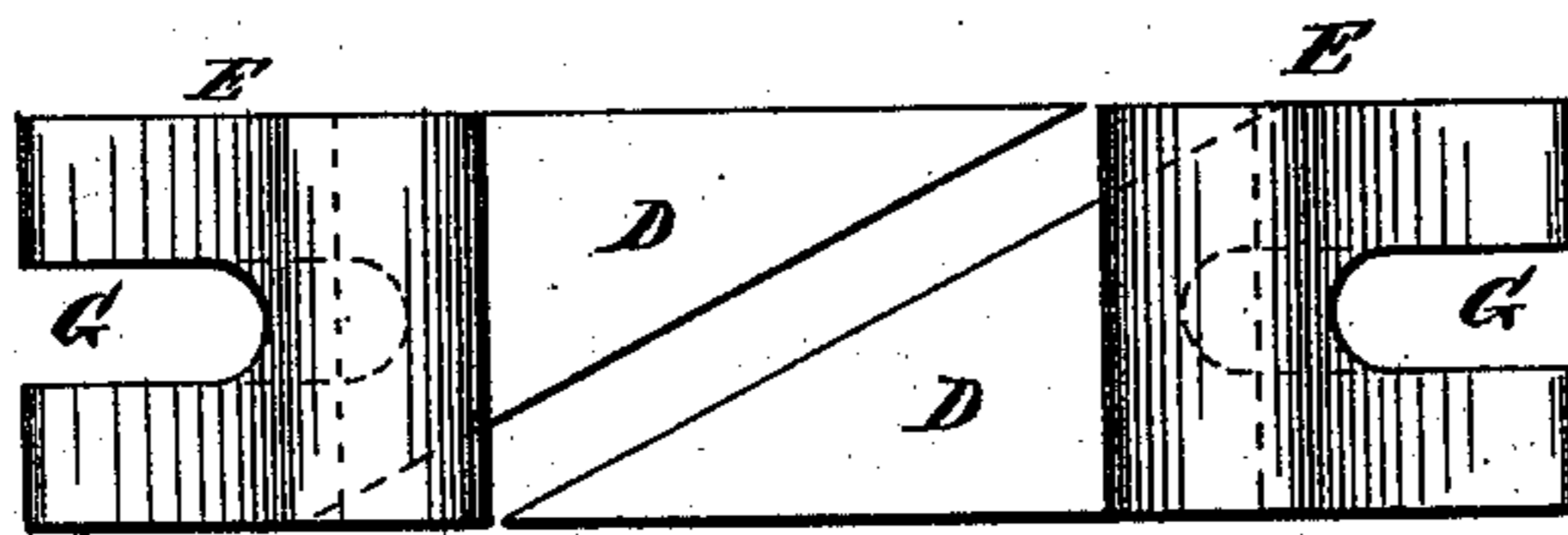
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:  
W. W. Gardner.  
Wm. A. Pollock

Inventor:  
Arthur J. Hartford  
By his Attorney,  
E. N. Dickerson

# UNITED STATES PATENT OFFICE.

ARTHUR J. HARTFORD, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE A. J. HARTFORD STEEL RAILWAY TIE MANUFACTURING COMPANY, OF WEST VIRGINIA.

## METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 401,949, dated April 23, 1889.

Application filed July 30, 1888. Serial No. 281,355. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR J. HARTFORD, of the city, county, and State of New York, have invented a new and useful Improvement in Railroad-Ties, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement in metallic railroad-ties; and it exhibits a form of tie in which the clips are capable of longitudinal adjustment, thereby adjusting the distance between the rails.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a transverse section through the tie and rails; Fig. 2, a section through the metal of the tie itself; Fig. 3, a plan view of the rail-holding clips, and Fig. 4 an elevation of the same.

The tie itself consists of a channel-beam, A. (Shown clearly in section in Fig. 2.) It is bent down at the ends to prevent the longitudinal motion of the beam. The tie itself is preferably rolled with the intermediate channel, which serves as a recess for holding the rail-clips. The rail-clips themselves, which are adjustable by screw-bolts C C, are shown clearly in Figs. 3 and 4 at D D. They consist of metallic clips having, approximately, the width of the channel in the beam, their inner ends being cut at an angle, as shown, so as to allow of their adjustment toward each other. The outer ends of these clips are bent over at an angle and slotted, as shown at E E, Fig. 4, for the purpose of holding the flange of the rail. The bolts C C themselves are preferably arranged with their heads at an angle to the axis of the bolt, so as to permit the bolts to assume the position shown in Fig. 1. By screwing down the nuts upon these bolts it is obvious that the clips can be drawn toward each other, and by screwing up one end and loosening the other the position of the rail R can be laterally adjusted. The bottom of the channel B is of course provided with openings F for the

passage of the bolts. This tie allows of the substitution of one tie for another without removing the rail. It is important that the nuts should be provided with some contrivance to prevent their accidental loosening.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a metallic railroad-tie provided with two rail-holding clips adjustable laterally of the length of the rail, thereby adjusting the rail upon the tie, and two screws, one engaging with each of said rail-holding clips, and serving, by the rotation upon the screw-thread, to draw said clips laterally tightly against the said rail, as well as to hold the clip vertically against the rail, substantially as described.

2. The combination of a metallic railroad-tie provided with two rail-holding clips adjustable laterally of the length of the rail, and a rail held within said clips, thereby adjusting the rail upon the tie, and two screws, one engaging with each of said rail-holding clips, and serving, by the rotation upon the screw-thread, to draw said clips laterally tightly against the said rail, as well as to hold the clip vertically against the rail, substantially as described.

3. The combination of the rail R, the metallic tie A, the clips D D, the bolts C C, and slots G G, whereby the rail can be laterally adjusted upon the tie, while at the same time it is locked in position when so adjusted, substantially as described.

4. The combination of the tie A, having longitudinal channel B, the clips D D, each capable of longitudinal adjustment in said channel, and bolts, as C C, for locking said clips when adjusted, substantially as described.

5. The combination of the tie A, having longitudinal channel B, the clips D D, resting in said longitudinal channel and having slots G G, the bolts C C, passing through the tie and through the slots G, and the rail R, substantially as described.

6. The combination of the tie A, having

longitudinal channel B, the clips D D, resting in said longitudinal channel and having slots G G, the bolts C C, having their heads at an angle to the axis of the bolts, and  
5 passing through the tie and through the slots G, and the rail R, substantially as described.

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

ARTHUR J. HARTFORD.

Witnesses:

ANTHONY GREF,  
WM. A. POLLOCK.