

(No Model.)

J. E. BILLUPS.  
CONSTRUCTION OF PERMANENT WAYS FOR RAILWAYS OR TRAMWAYS.  
No. 500,366.

Patented June 27, 1893.

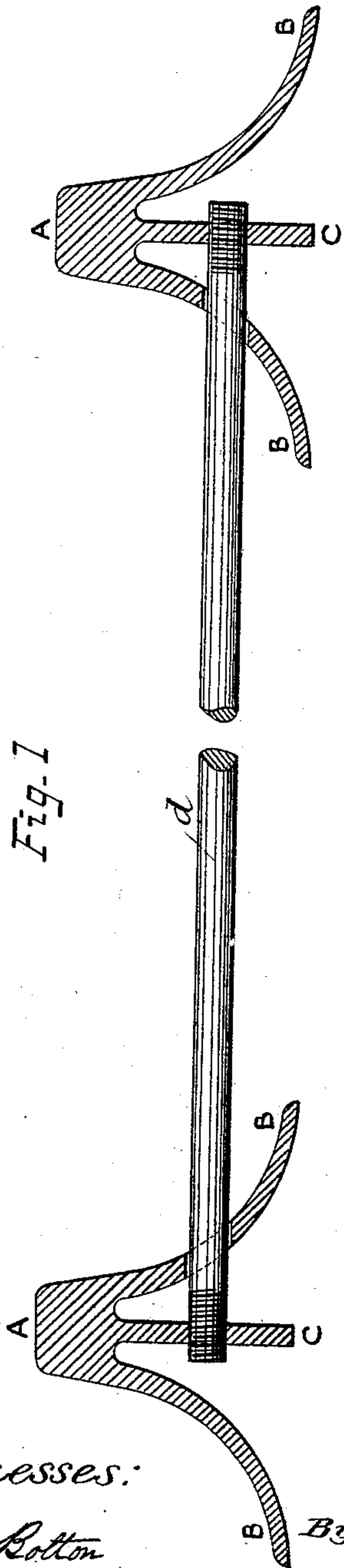


Fig. 1

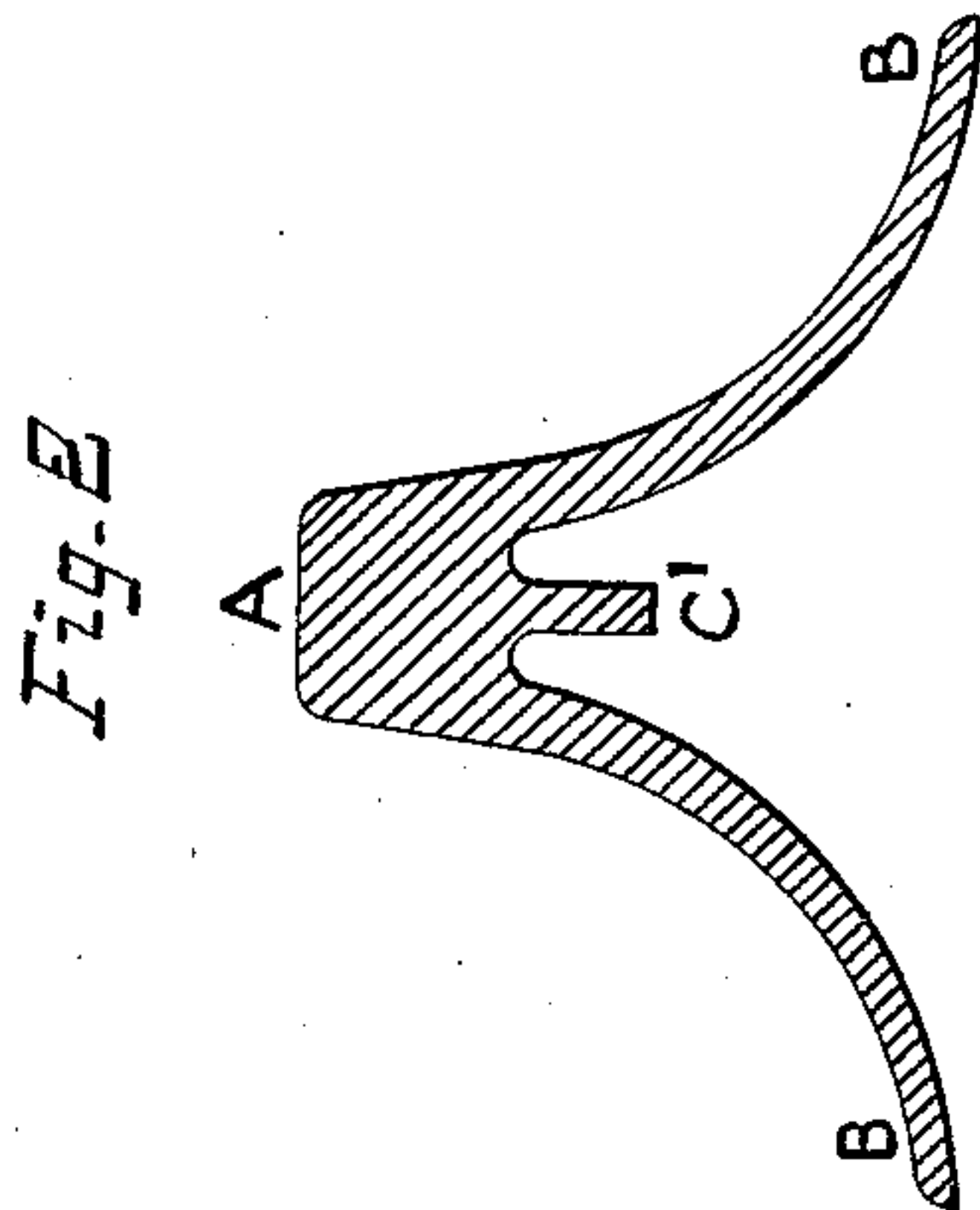


Fig. 2

Witnesses:

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# UNITED STATES PATENT OFFICE.

JONATHAN E. BILLUPS, OF CARDIFF, ENGLAND.

CONSTRUCTION OF PERMANENT WAYS FOR RAILWAYS OR TRAMWAYS.

SPECIFICATION forming part of Letters Patent No. 500,366, dated June 27, 1893.

Application filed September 11, 1891. Renewed March 23, 1893. Serial No. 467,374. (No model.)

*To all whom it may concern:*

Be it known that I, JONATHAN EDWIN BILLUPS, a subject of the Queen of Great Britain, residing at Cardiff, in the county of Glamorgan, Wales, England have invented new and useful Improvements in the Construction of Permanent Way for Railways or Tramways, of which the following is a specification.

In the accompanying sheet of drawings  
10 Figure 1 is a cross section of a line having rails of a modified form of "Barlow" section, with my improved tie rod applied thereto, and Fig. 2 is a cross section of a modified form of rail.

15 The rail shown is formed with a head A, two curved side flanges B B, and a central web C projecting vertically downward under the head of the rail. If the central web be removed the rails shown would be of ordinary  
20 "Barlow" section.

The improved tie rod consists of a bar *d*, of round or other desired section, having a short right hand screw cut or otherwise formed on one end, and a left hand screw on the  
25 other end. Holes are formed through the inner side flanges of the rails and the central web C. The holes in the web in one rail are tapped with a right hand thread, and in the other rail with a left hand thread. The holes  
30 in the flanges are merely clearing holes. The rod *d* being screwed into place the gage of the

line can readily be adjusted by rotating the tie one way or the other, accordingly as the gage requires widening or narrowing. Lock nuts, if desired, may be applied to the ends of  
35 the tie.

The use of my improved tie is not confined to the particular section of rail shown in the drawings. It is equally applicable to ordinary flange or "Vignolles" rails, double-  
40 headed, bull headed, or other sections of rail.

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

1. In combination with the rail having the  
45 flaring side flanges and the central depending web, the said web having an opening and one of the flanges having an opening in line therewith, the tie rod passing through the opening in the flange and having its end se-  
50 cured in the opening of the web, substantially as described.

2. In combination the rail having the flaring side flanges and the central depending web, and the tie rod passing through the said  
55 side flanges and screw threaded into the depending webs, substantially as described.

J. E. BILLUPS.

Witnesses:

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