

(No Model.)

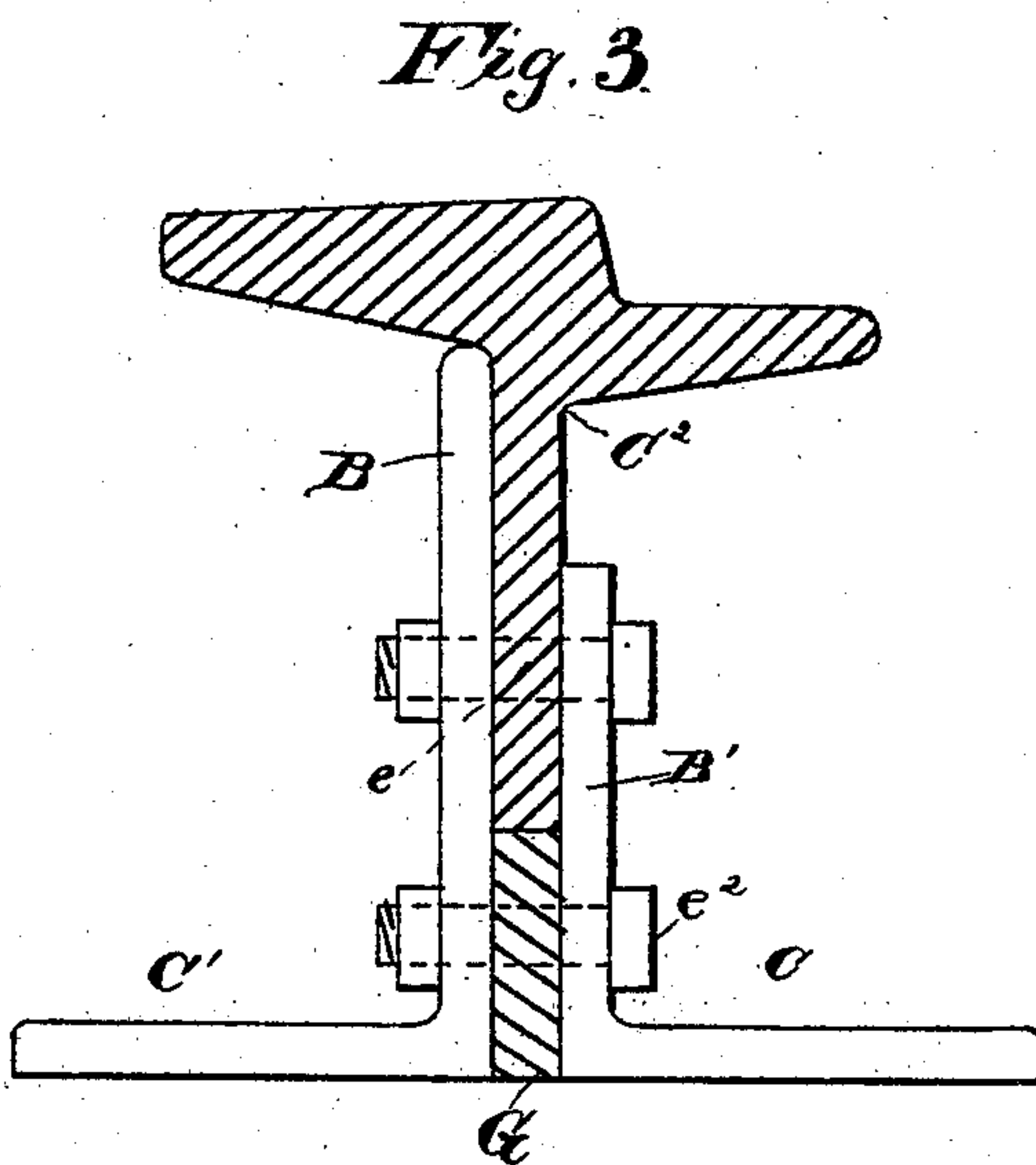
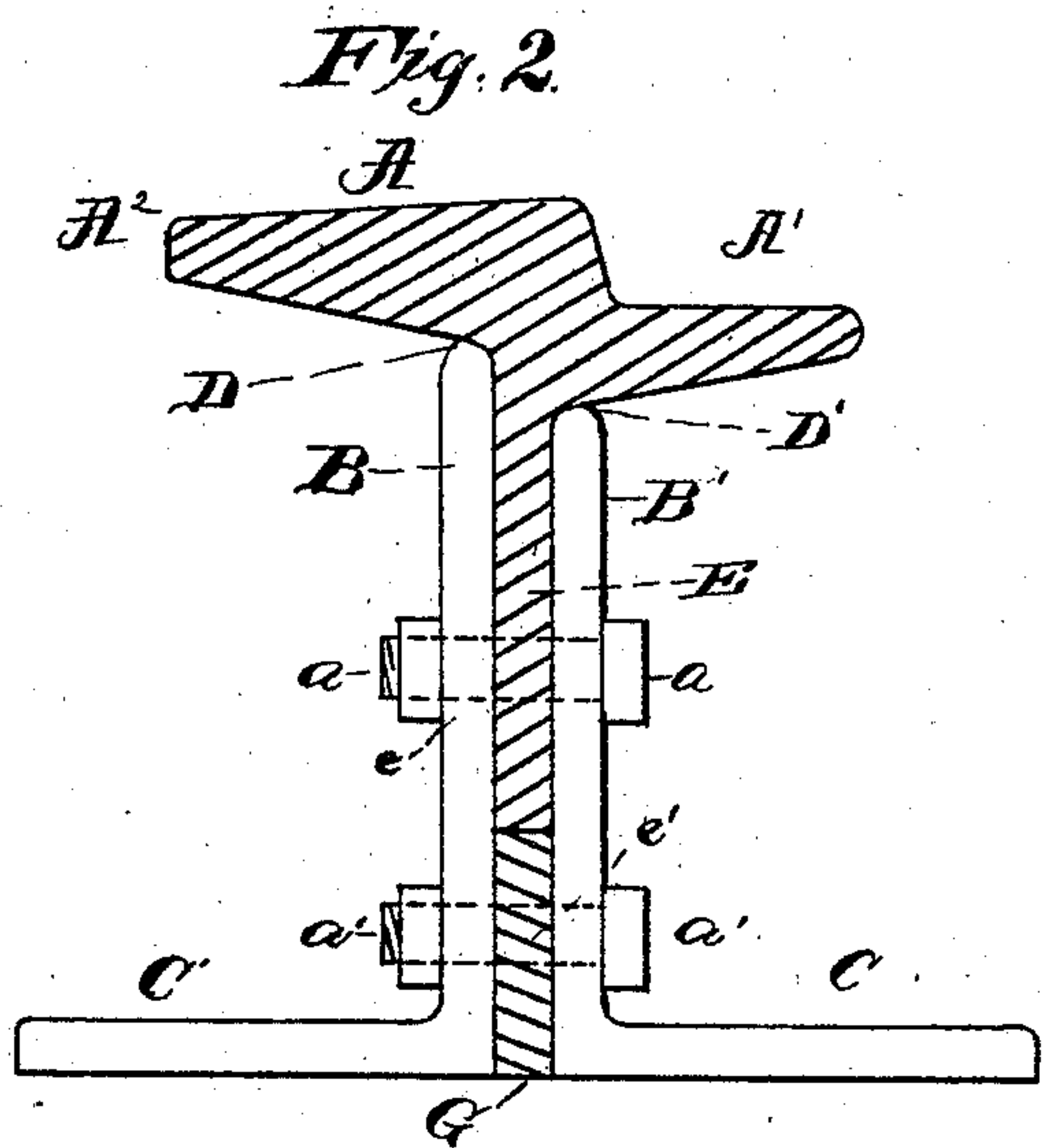
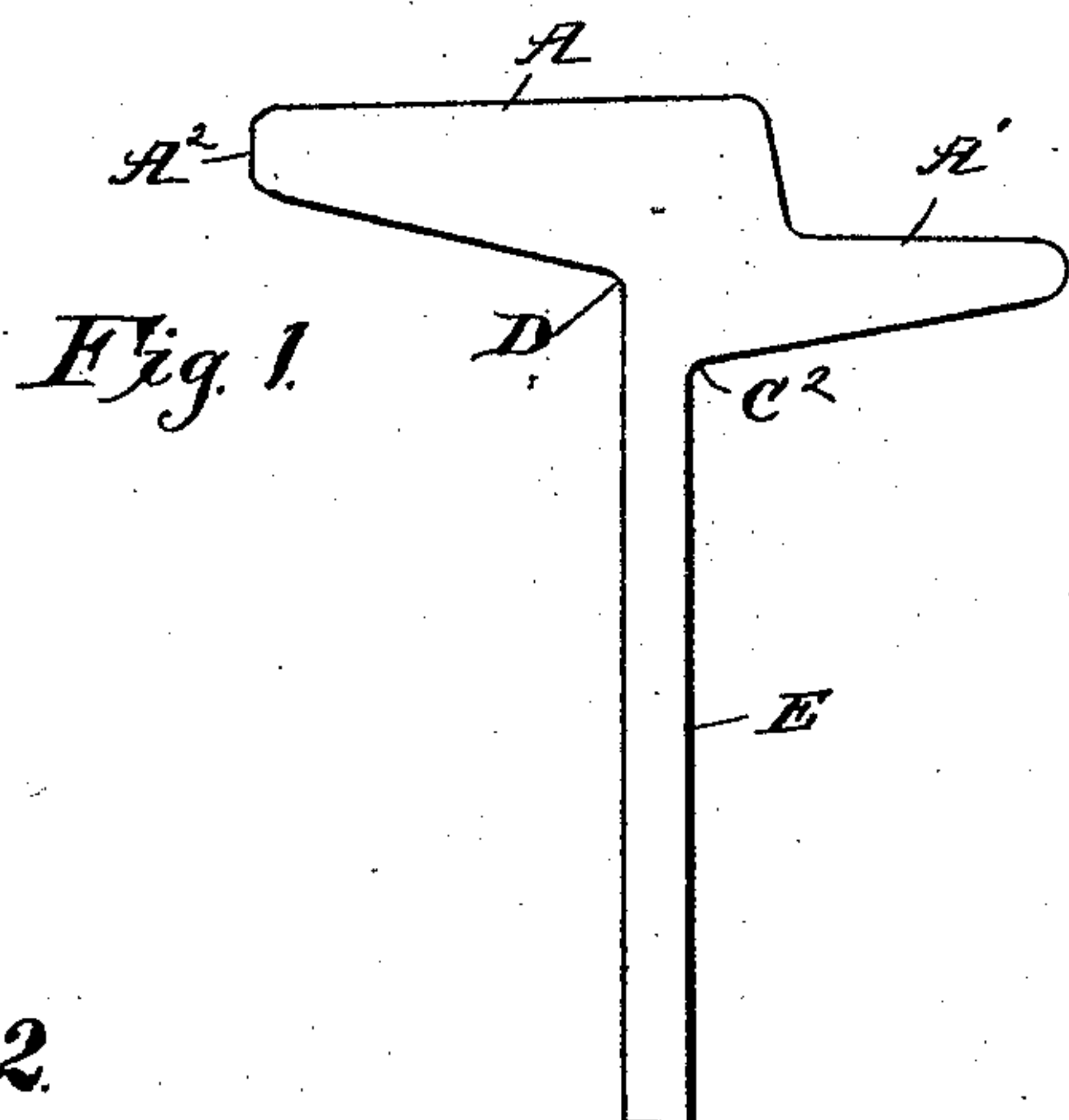
2 Sheets—Sheet 1.

H. H. LITTELL.

GIRDER RAIL.

No. 369,186.

Patented Aug. 30, 1887.



Witnesses:

J. Henry Stuart.

W. L. Boyden.

Inventor.

Harold H. Littell

By Chas. E. Barber  
His atty in fact

(No Model.)

2 Sheets—Sheet 2.

H. H. LITTELL.

GIRDER RAIL.

No. 369,186.

Patented Aug. 30, 1887.

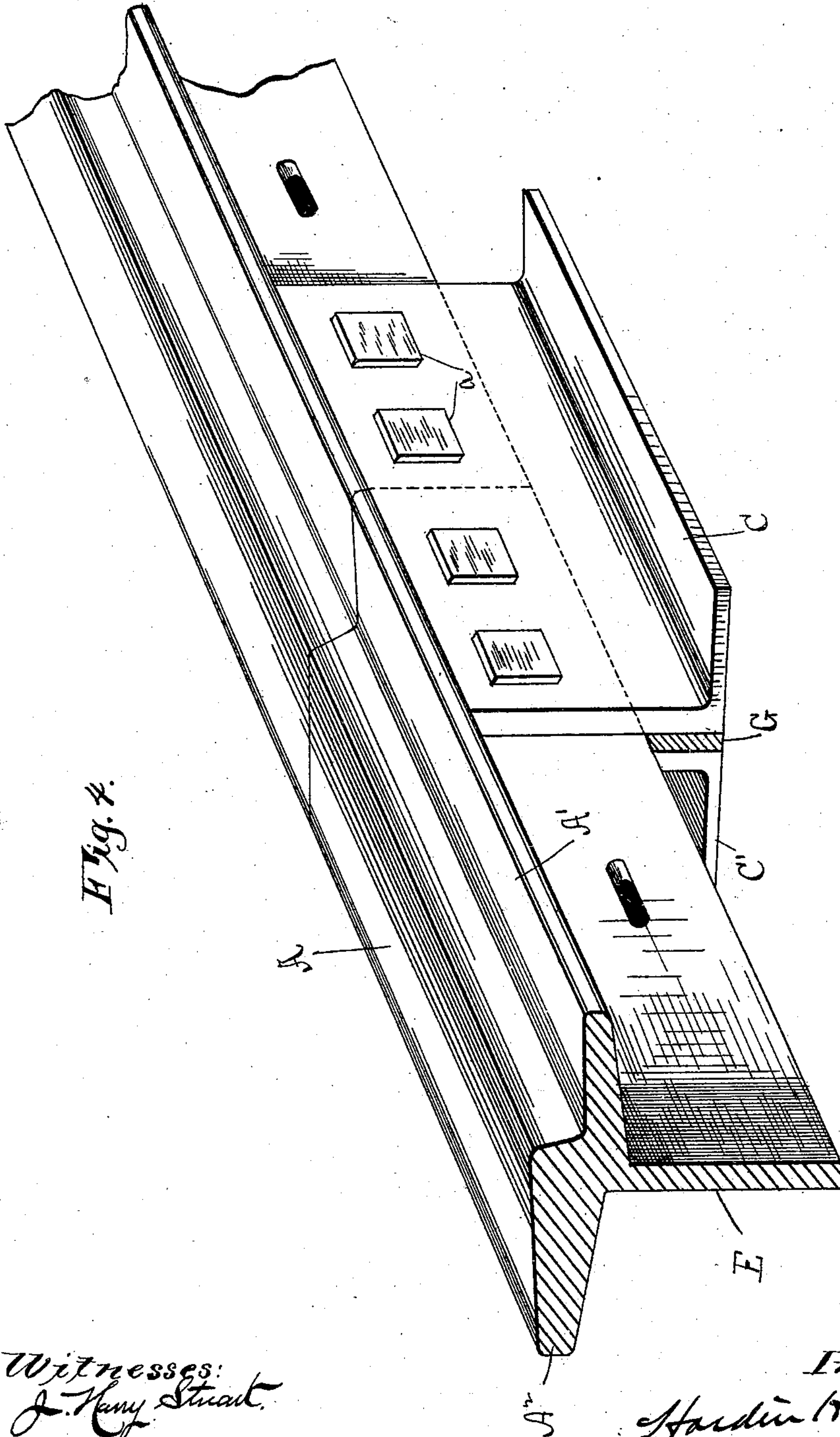


Fig. 4.

Witnesses:

J. Henry Stuart.

W. L. Boyden

Inventor.

Hardin H. Littell.

By Chas. O. Barber  
His Atty in fact



# UNITED STATES PATENT OFFICE.

HARDIN H. LITTELL, OF LOUISVILLE, KENTUCKY.

## GIRDER-RAIL.

SPECIFICATION forming part of Letters Patent No. 369,186, dated August 30, 1887.

Application filed July 1, 1886. Serial No. 206,807. (No model.)

*To all whom it may concern:*

Be it known that I, HARDIN H. LITTELL, a citizen of the United States, residing at Louisville, in the county of Jefferson, in the State of Kentucky, have invented a new and useful Improvement in Girder-Rails for Street-Railways, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is an end view of my improved rail. Fig. 2 is a cross-section of the same, showing a chair which supports the rail. Fig. 3 is a cross-section showing a modified form of chair. Fig. 4 is a perspective view of a rail provided with a chair and sleeper.

This invention relates to rails for street-railways; and it consists in the novel construction and arrangement of parts, as will be hereinafter fully set forth, and particularly pointed out in the claim at the end of the specification.

In all drawings, A designates the top of the rail, or that portion upon which the tread of the wheel travels.

A' represents the inner flange of the rail, and A<sup>2</sup> represents the outer flange of the same.

E designates the girder, which is perforated at *e* to receive the bolt *a*. It will be observed that the girder is integral with the underside of the rail, and that the general plane of the under side of the flange A<sup>2</sup> is somewhat above and extends at an angle to the plane of the lower side of the inner flange, A'.

At the junction D—that is, the junction of the outer top part of the girder and the lower inner portion of the face of the outward flange—there is a recess or angle, in which snugly fits the upper end of the flange B of the chair, which flange is formed integral with the part C' of the chair, which forms the rail-seat. On the opposite side of the girder, and somewhat below the line of the recess or junction D, is a similar recess, C<sup>2</sup>, into which fits the upper end of the flange B', as shown in Fig. 2, which flange is formed integral with the portion C of the chair, which supports the girder and the rail. This form of rail is admirably adapted to resist the jarring and thumping of the street

traffic, as well as that of the car. The lower portion of the girder E is perforated and slotted to receive the bolt *a*. This girder is also supported at its bottom by the sleeper or bed-piece G, which in turn is perforated at *e'* to receive the bolt *a'*. Instead of this bolt, I may use a rivet, *e'*, as is shown in the lower portion of Fig. 3. Any force which is brought to bear upon the top of the rail is transmitted to the lower portion of the rail and the girder, and is counteracted by the resistance of the upper portion of the flange B and by the bed-piece G, which supports the girder.

By reference to Fig. 3 it will be observed that I construct the chair somewhat similar to the chair shown in Fig. 2, but that in that instance the flange B' of the portion C of the chair is made somewhat shorter than the flange B, which is a part of the chair C'. In this instance I show the girder perforated at *e* as it is in Fig. 2, and the sleeper is also secured in its place beneath the girder by a bolt or rivet. It is quite apparent that the construction shown in this figure (3) will greatly facilitate the removing and replacing of the rail, should occasion require it, or should it be found desirable to do so.

Having described the general construction of my improved girder rail, what I claim as my invention is—

The rail provided with the head A and the outer flange, which is approximately in alignment with the top of the head, and provided with an inner flange, the top of whose plane is about parallel with the bottom of the outer flange, and having a girder which is of uniform thickness, and which is perforated to receive a bolt, in combination with the chair having the two flanges and the bed-piece, which is perforated and adapted to be secured beneath the girder, all constructed and combined to operate substantially as described.

In testimony that I claim the above I hereunto set my hand in presence of two subscribing witnesses.

HARDIN H. LITTELL.

Witnesses:

R. A. WATTS,  
J. M. PETTUS.