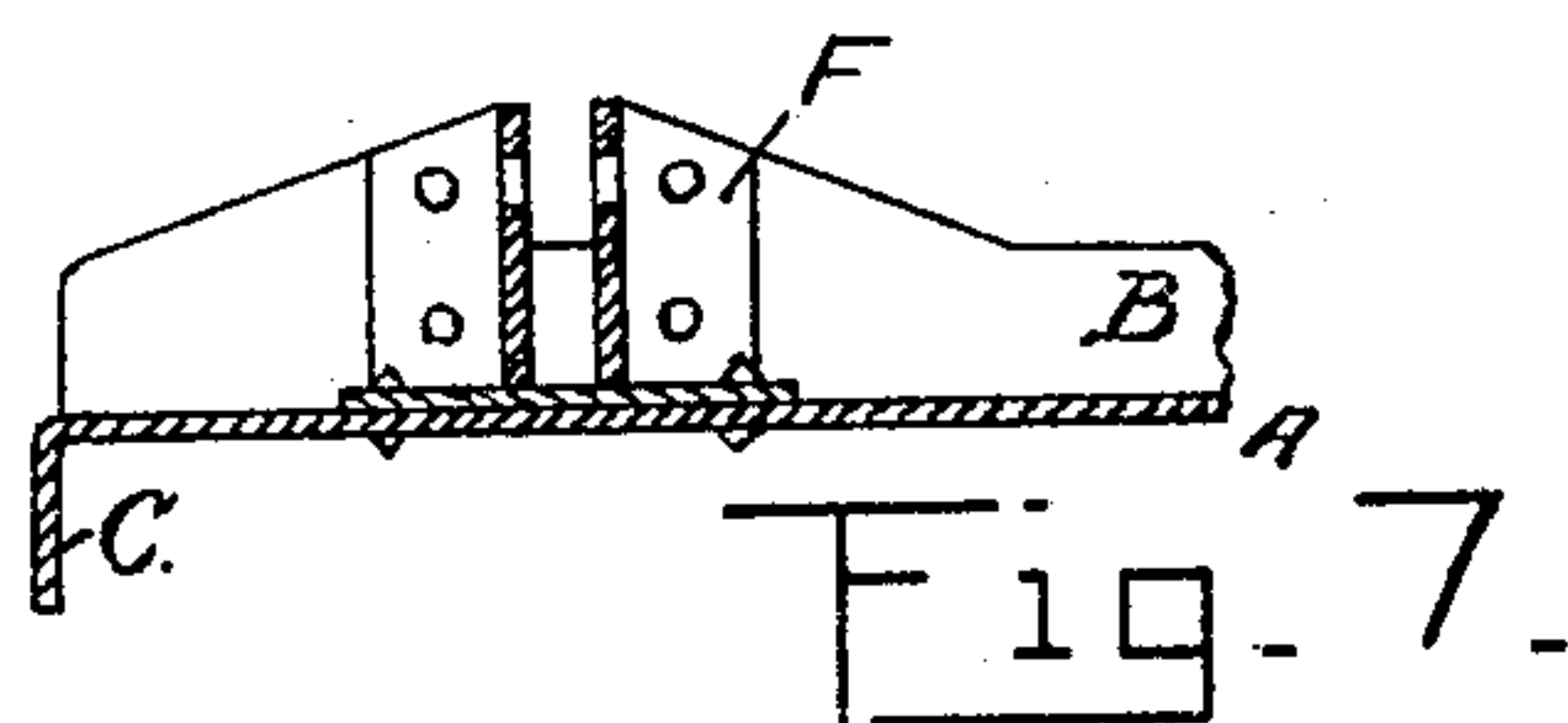
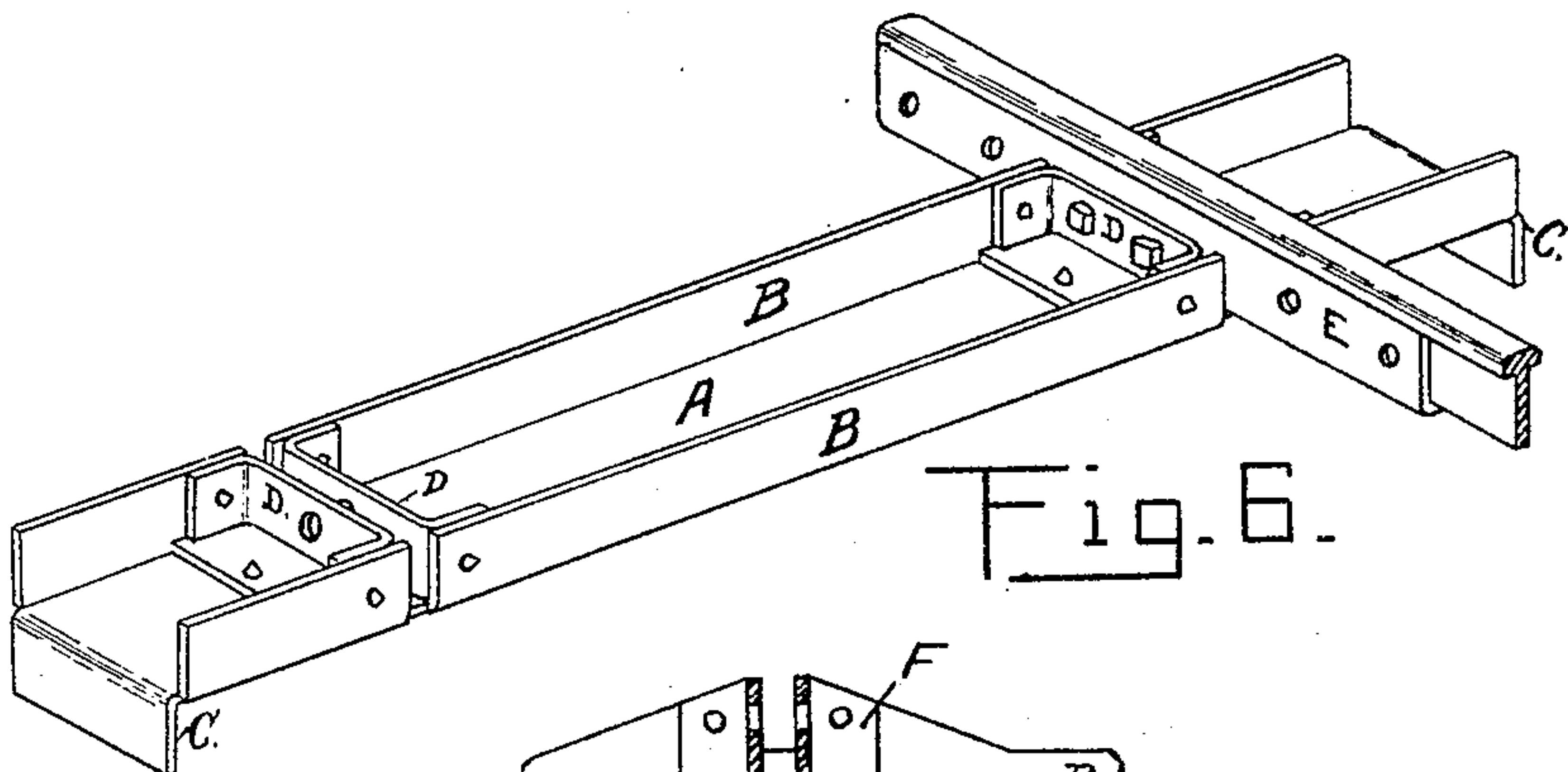
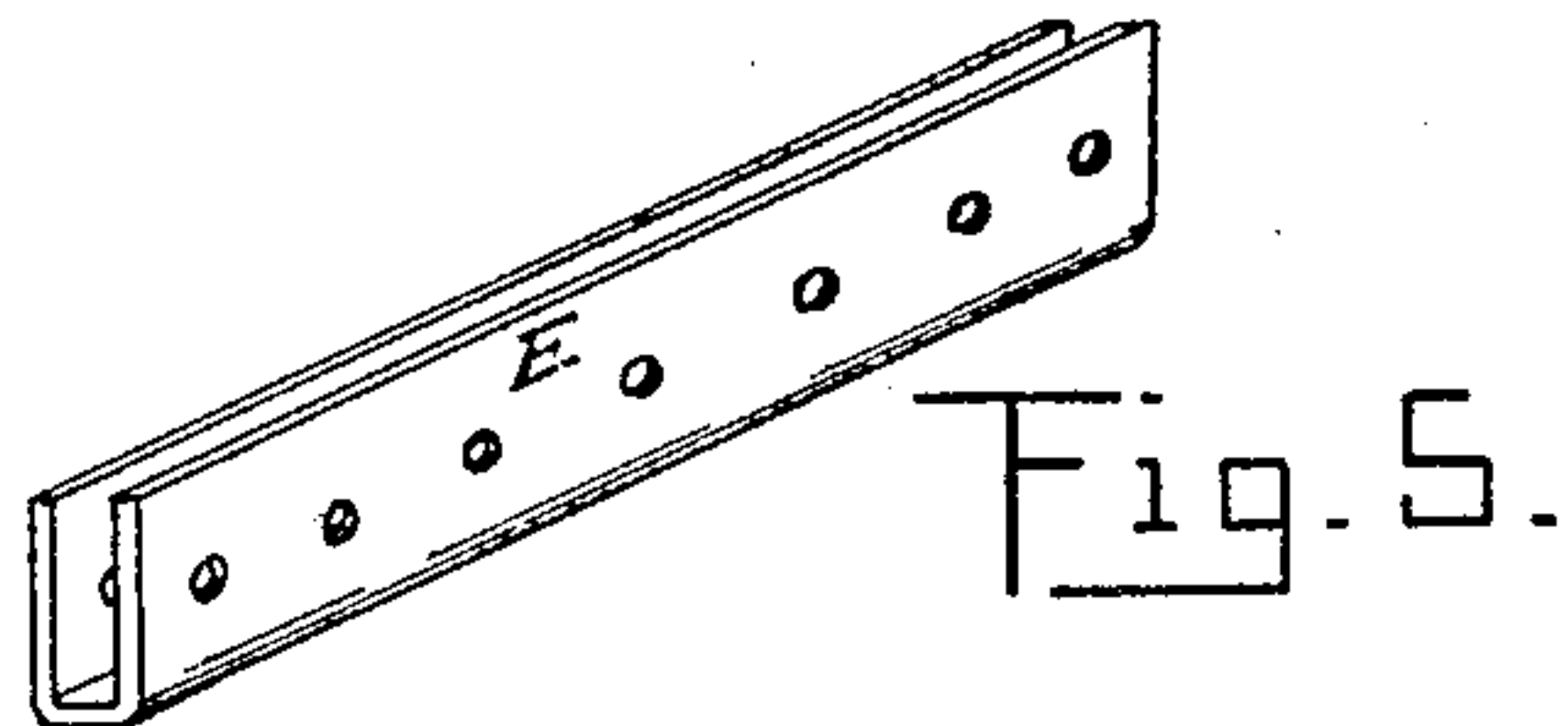
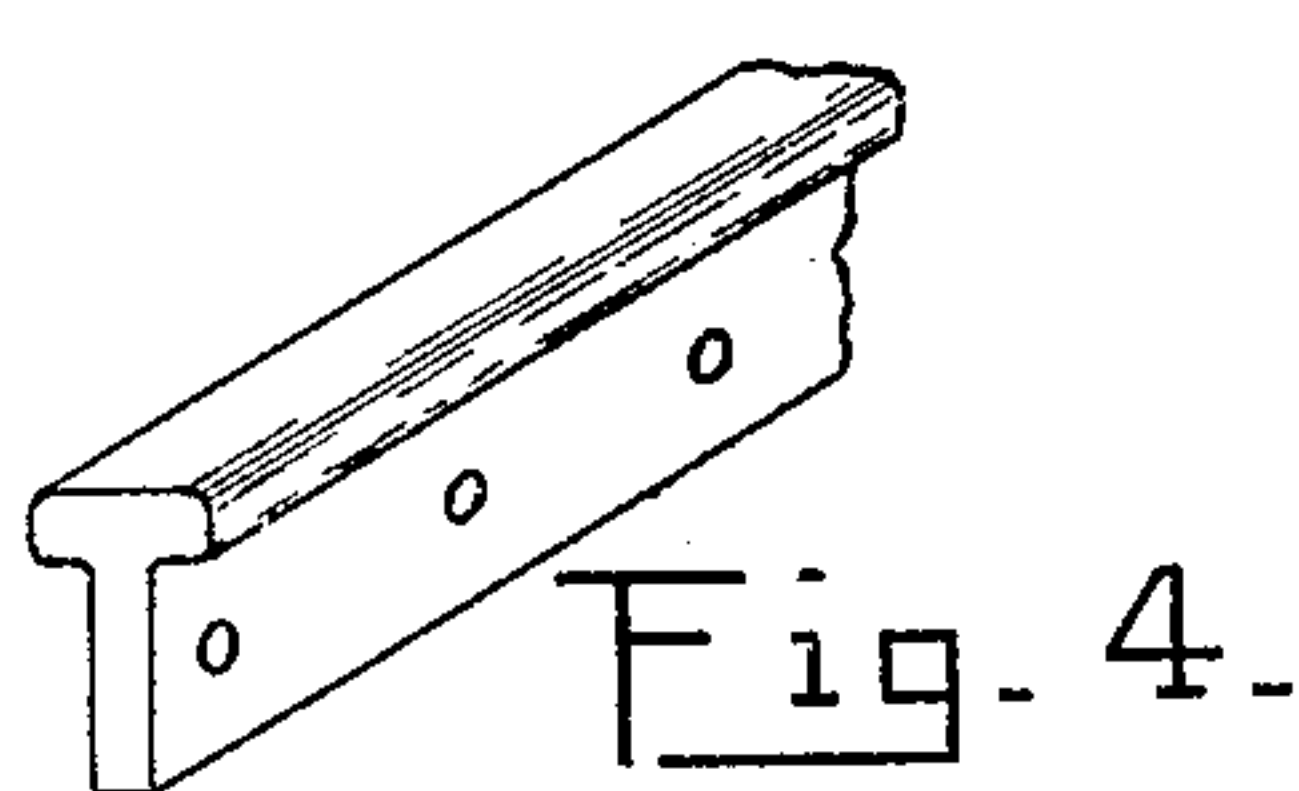
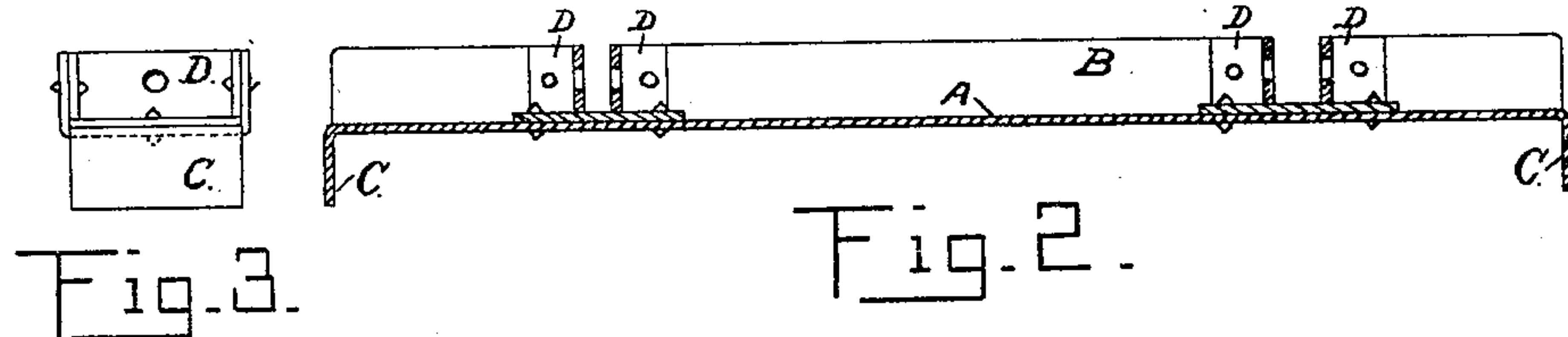
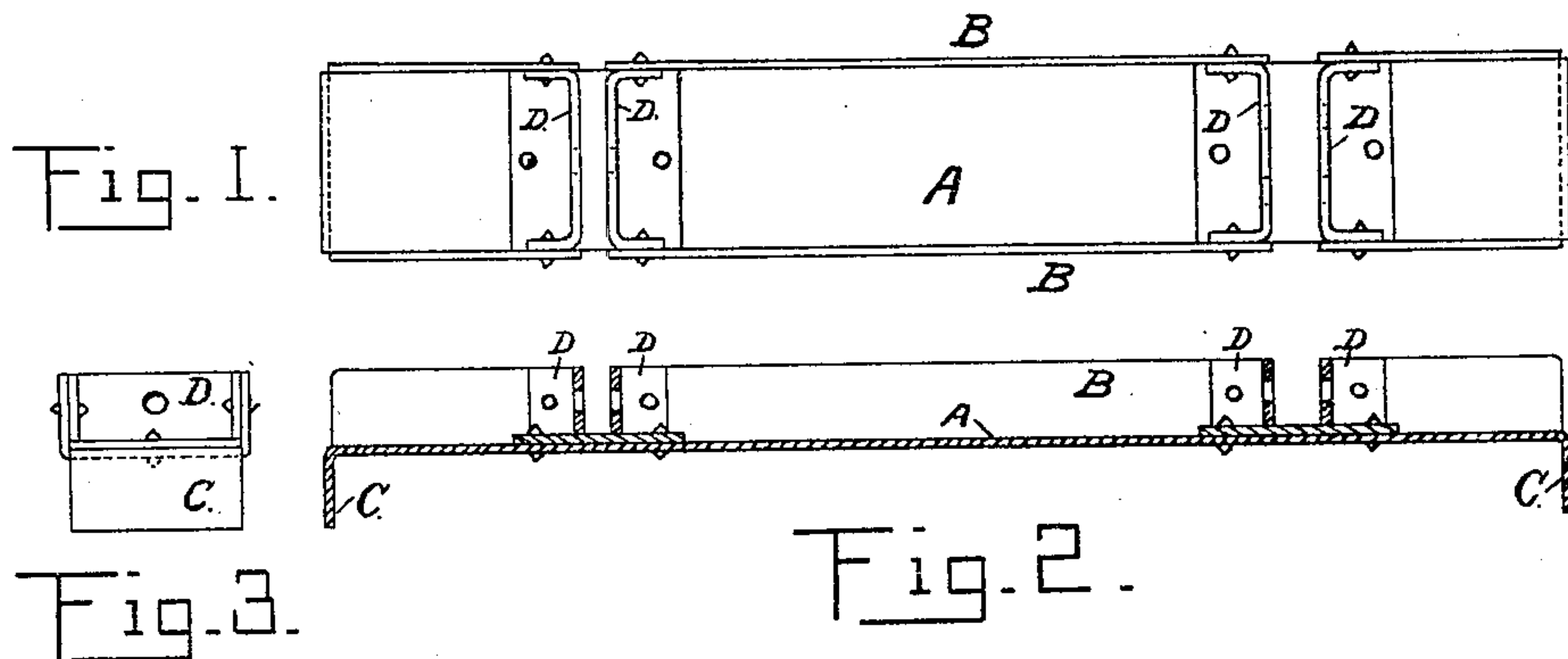


No. 803,611.

PATENTED NOV. 7, 1905.

R. H. LUTZ.  
METALLIC RAILWAY TIE.  
APPLICATION FILED JULY 28, 1905.



Witnesses  
*Dudley B. Wade*  
*Lottie Prior*

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Attys.

# UNITED STATES PATENT OFFICE.

ROBERT H. LUTZ, OF ROTTERDAM, NEW YORK.

## METALLIC RAILWAY-TIE.

No. 803,611.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed July 28, 1905. Serial No. 271,569.

*To all whom it may concern:*

Be it known that I, ROBERT H. LUTZ, a subject of the King of Great Britain, residing at Rotterdam, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

My invention relates to railway-ties; and the objects of my invention are to construct a metallic railway-tie which will be durable, substantial and economical, and easily used. I attain these objects by metallic railway-ties constructed as shown in the accompanying drawings, in which—

Figure 1 is a plan view of my railway-tie. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is an end view. Fig. 4 is a perspective view of a portion of the rail to be used with my tie. Fig. 5 is the fish-plate to be used with my tie in joining the ends of the rails together. Fig. 6 is a perspective view of my tie with the rail upon it. Fig. 7 shows a modified form of attaching the rails.

Similar letters refer to similar parts throughout the several views.

A represents the bed-piece of my tie, preferably made of steel in the form of a trough, having sides B B bent upward and the ends C C of the bottom of the bed-piece bent downward, as shown in Figs. 2 and 6. These downwardly-projecting ends or flanges C C are embedded in the earth to prevent the tie from moving lengthwise. The bed-piece may be made of any desired length for single or double tracks. Instead of using the style of rails now in ordinary use, with broad bottom flanges to support the rail, the rails used with my invention have no bottom flange, but have plain straight sides from the upper flange, designed for the car-wheel to run upon, to the bottom of the rail, as shown in Fig. 4.

At the places in my railway-tie where the rail is designed to rest I cut away the sides B B and reinforce the bottom of the tie by a steel plate, as shown in Figs. 2 and 6, so that the rail will rest on the bed-piece thus reinforced and between the openings formed by cutting away the sides B B. On each side of the opening thus formed for receiving the rail I bolt plates D D to the sides B B of the bed-piece, forming a channel for the rail to rest in. Where the joints of the rails come together, I use the fish-plate E, as shown in

Fig. 5, and bolt the fish-plate and the plates D D firmly to the rails in the usual manner.

Where it is desired to have the rails elevated above the bottom of the bed-plate, as upon the top of the sides B B, I use a chair or plate F, Fig. 7, which is bolted to the sides of the bed-piece and has a recess cut down as deep as may be desired to receive the rail or the fish-plate and rail.

With railway-ties constructed in this way the tracks once laid are permanent. The joints of the rails are absolutely smooth and perfect. The undesirable wooden ties, which are continually rotting and deteriorating, are dispensed with. The useless amount of steel forming the lower flanges of the rail is dispensed with, thus cheapening the cost and reducing the weight of the rail, and the spikes driven in the wooden ties, which are continually working up, are entirely done away with, and it is impossible for the rails to spread. When a track is once made with my metallic ties, it will last for a great many years and for the entire lifetime of the rails.

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

1. A metallic railway-tie in the form of a trough with the ends of the bottom turned downward and notches cut in the sides adapted to receive the rail, metallic plates secured to the bottom of the trough forming the bed-piece for the rail to rest upon, plates attached to the sides of the trough on each side of the openings forming channels of sufficient width for the rail to rest in and adapted to be attached by bolts to the rail, substantially as described.

2. A metallic railway-tie in the form of a trough, the bottom of the trough forming the bed-piece of the tie, notches cut in the sides adapted to receive the rail, and a fish-plate adapted to rest in said notches and cover the bottom and both sides of a rail constructed without any lower flanges, the fish-plate forming a channel for the rail to rest in and adapted to be bolted to the sides of the rail, substantially as described.

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

ROBERT H. LUTZ.

Witnesses:

FREDERICK W. CAMERON,  
LOTTIE PRIOR.