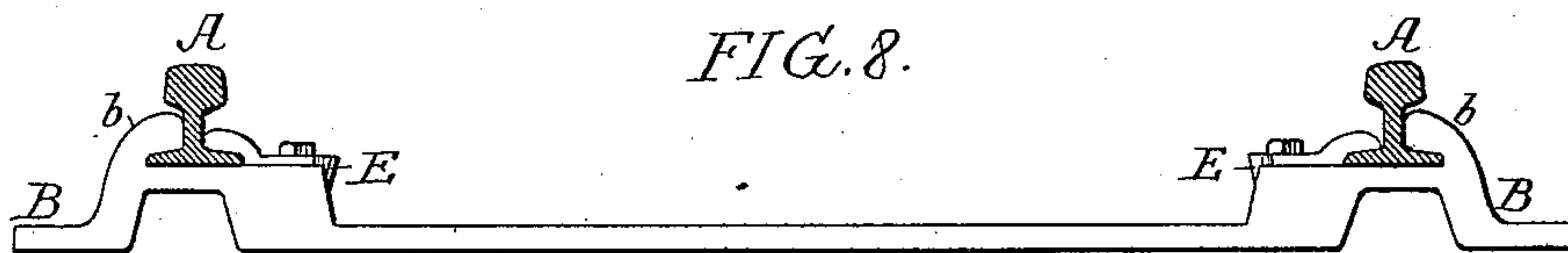
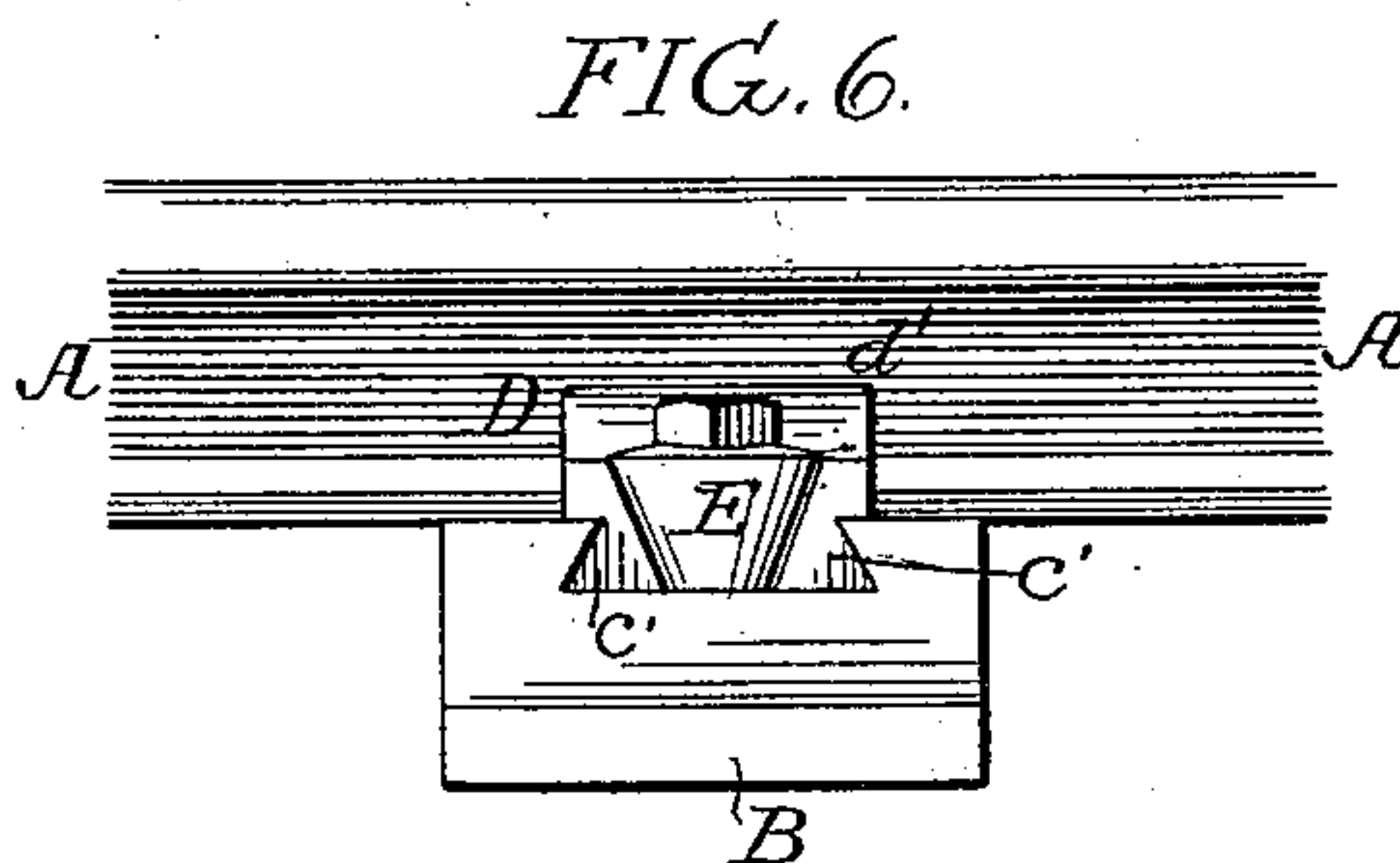
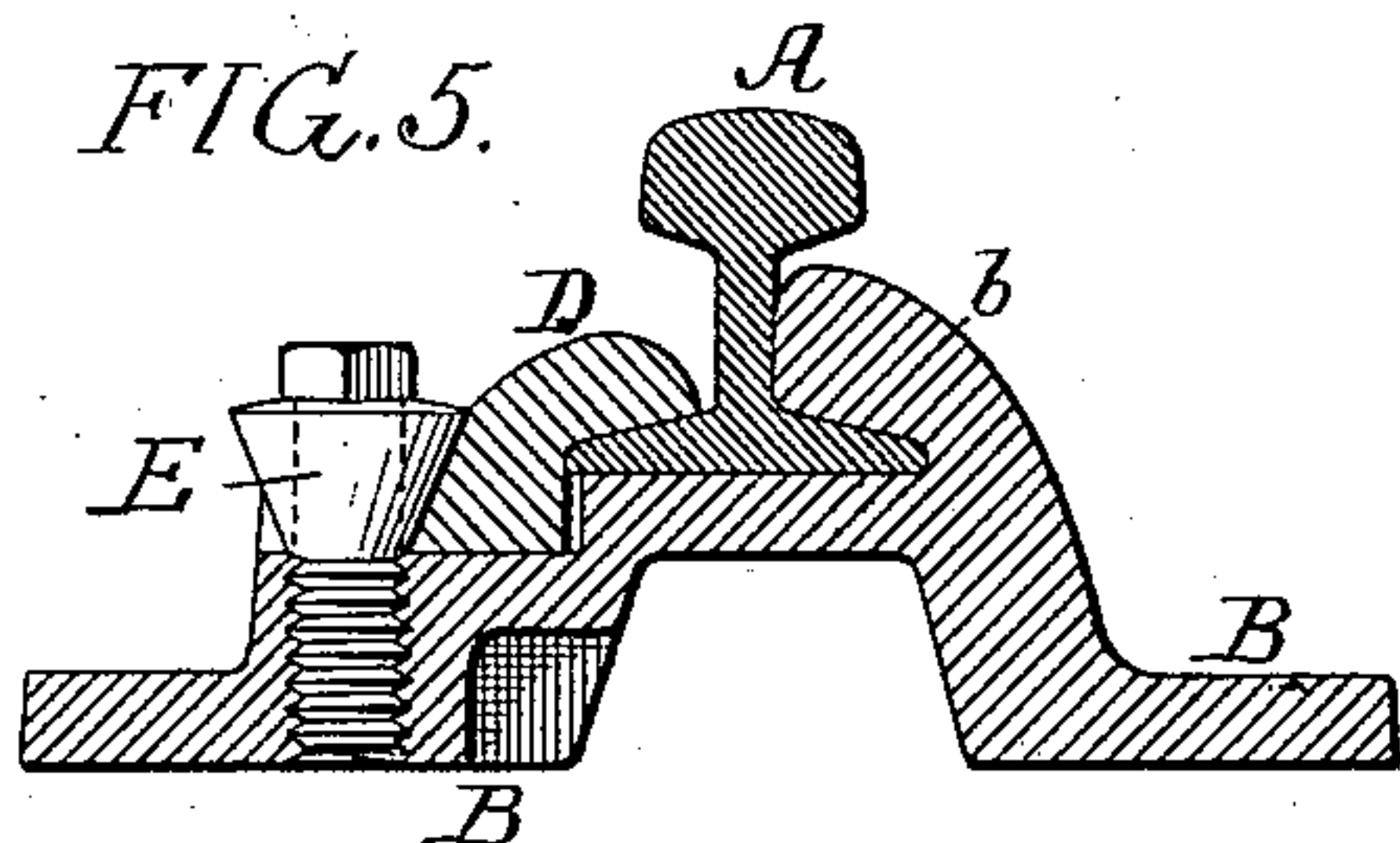
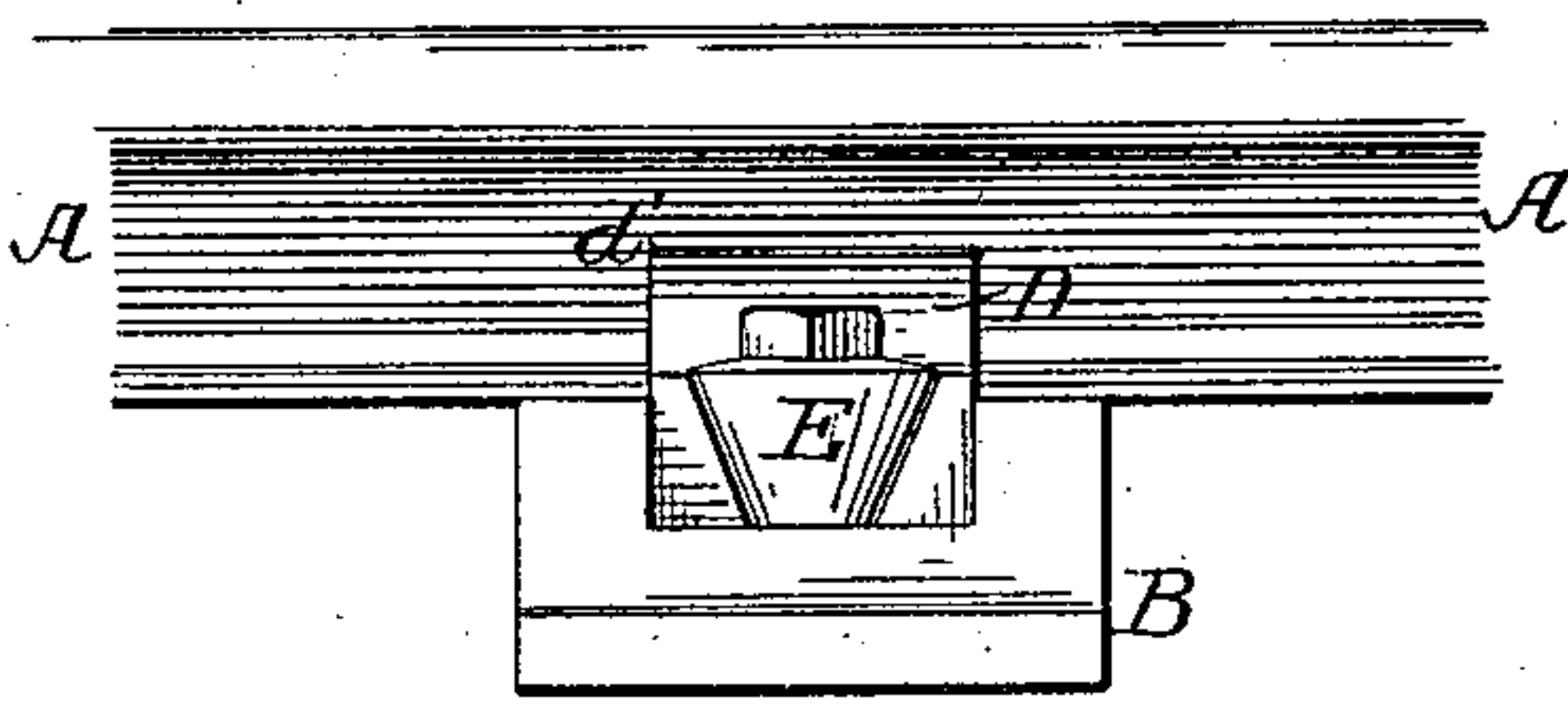
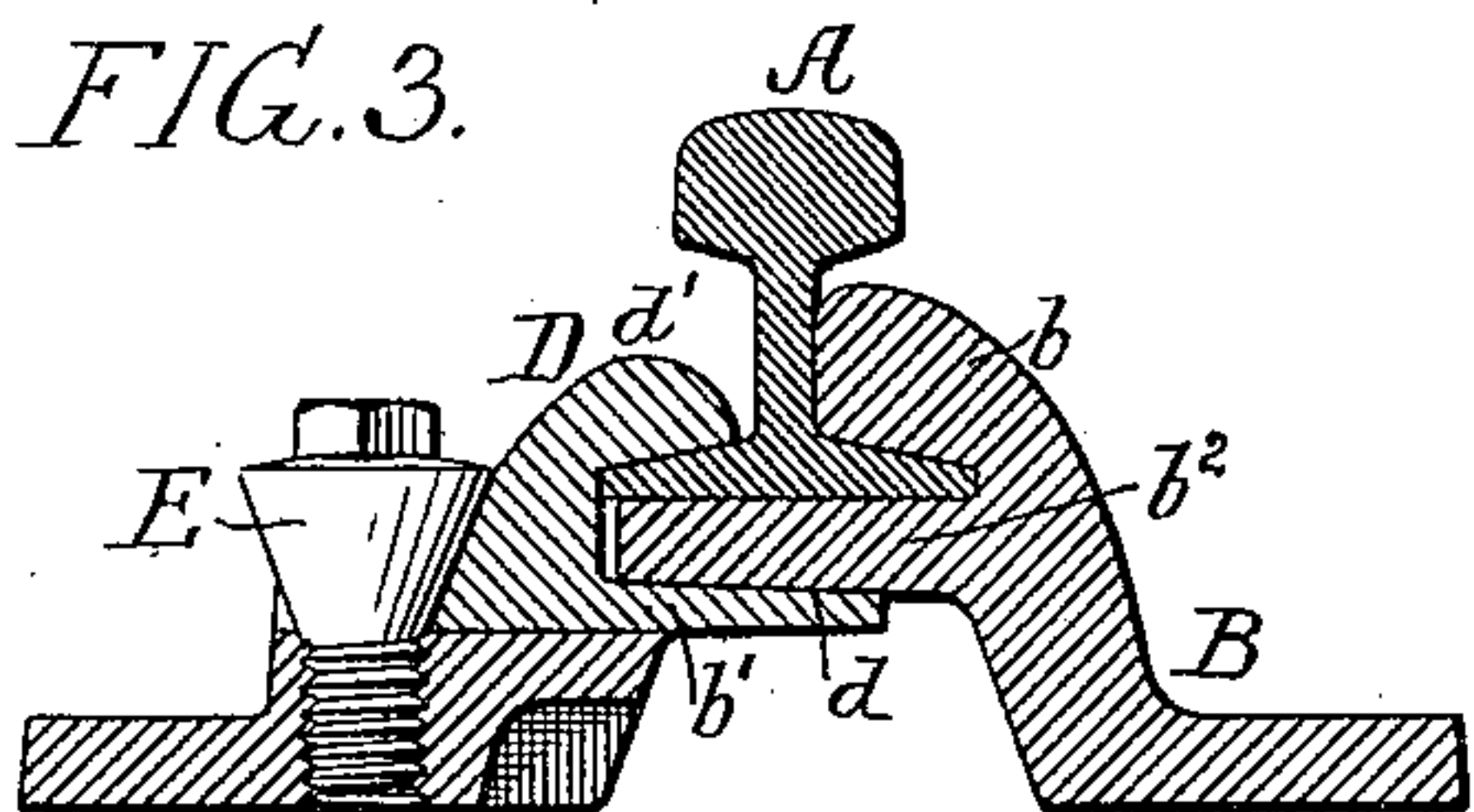
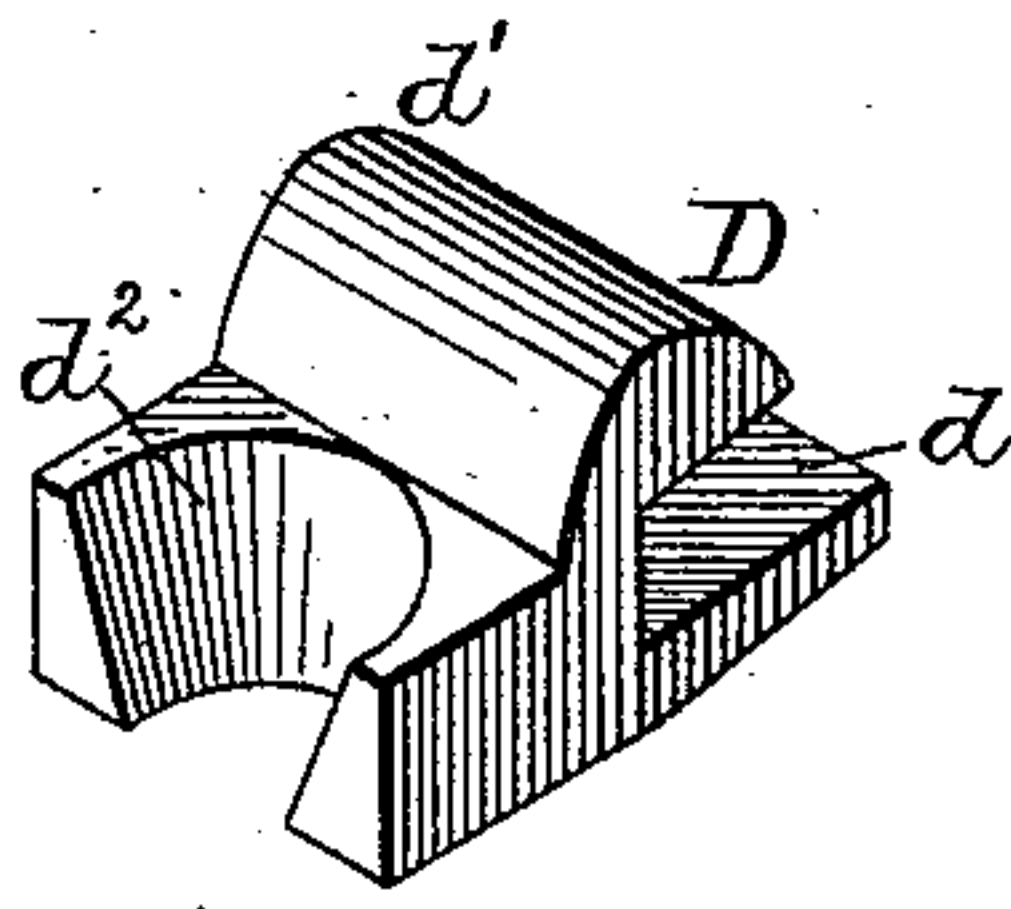
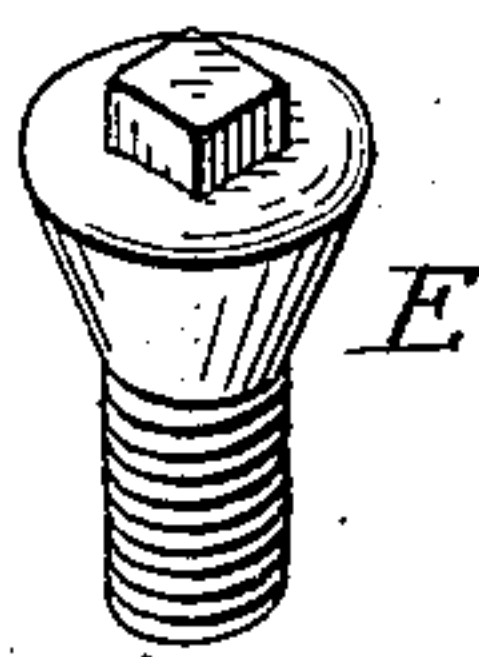
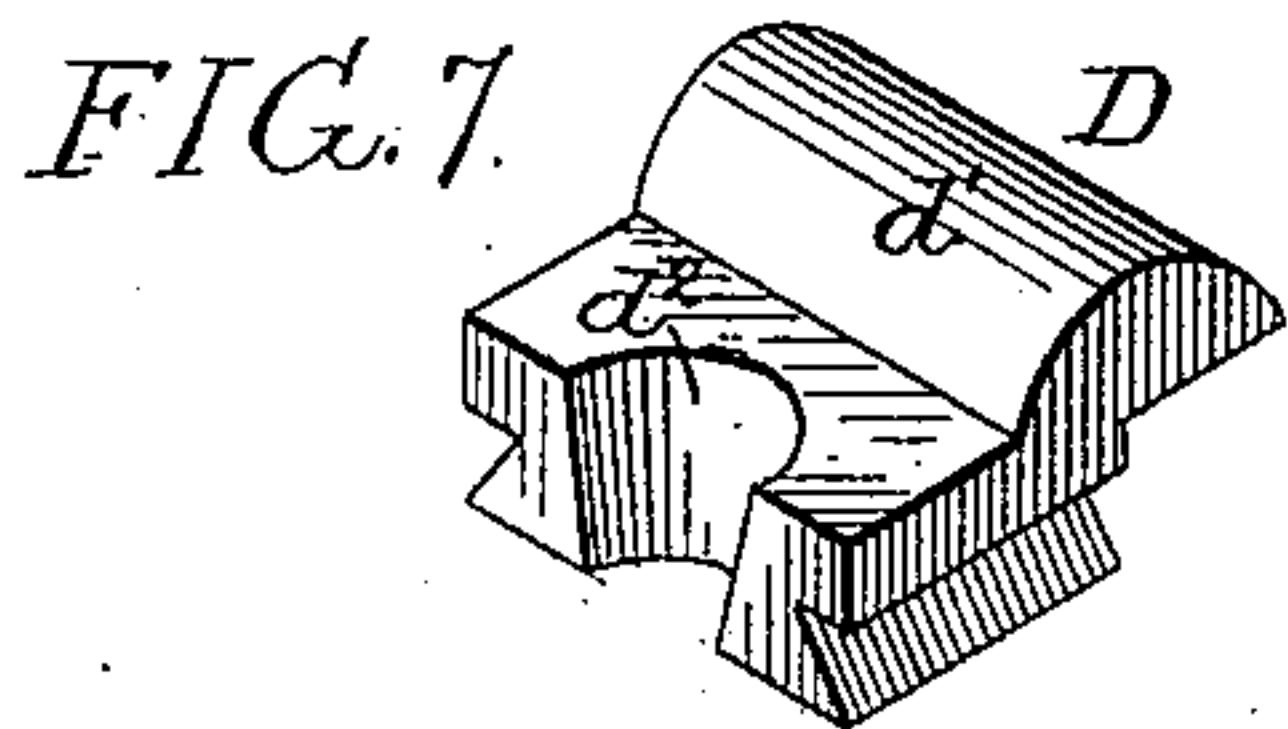
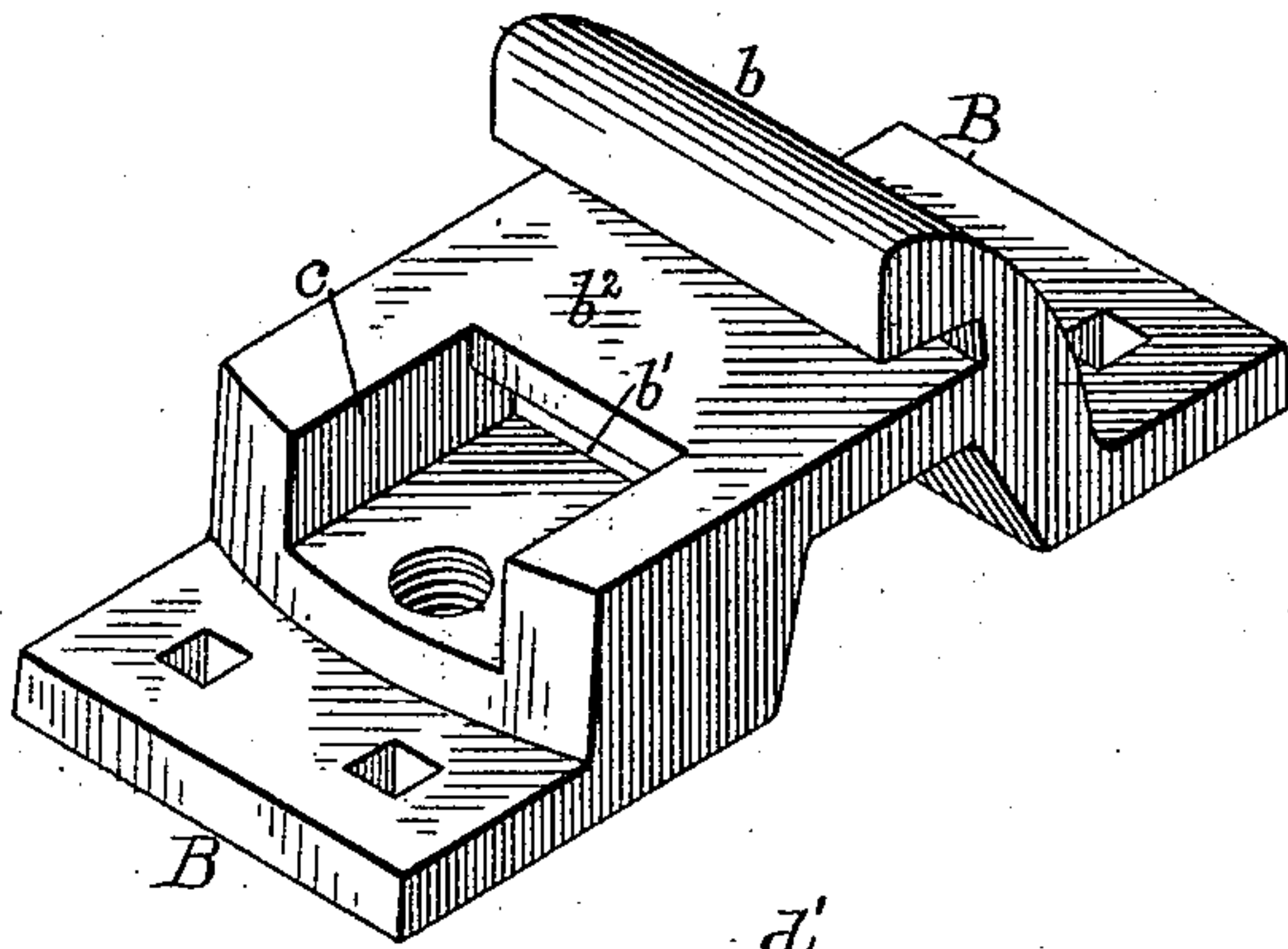
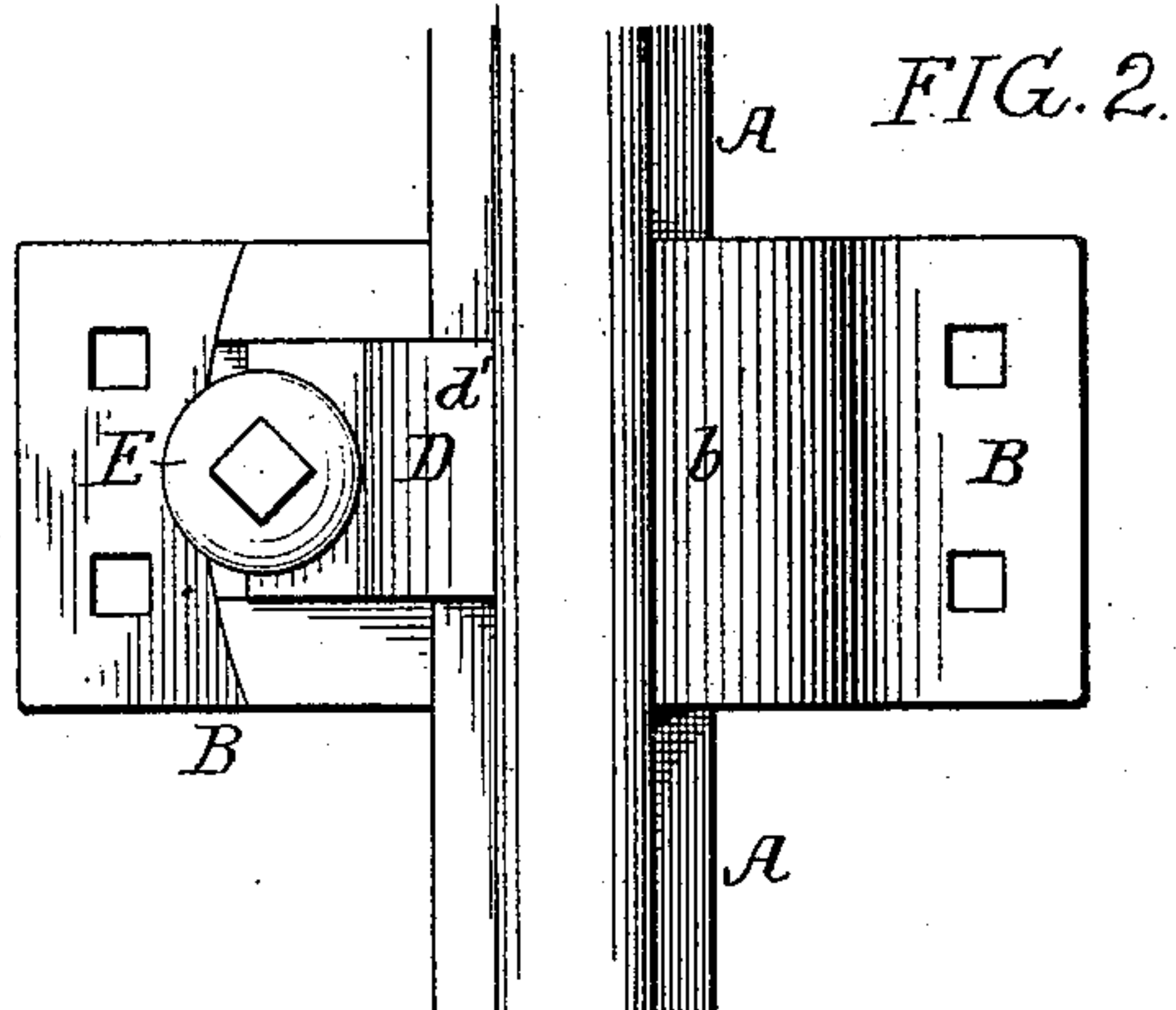


(No Model.)

W. H. MATTSON.  
RAIL FASTENING.

No. 470,943.

Patented Mar. 15, 1892.



Witnesses:  
A. V. Groupe.  
Fred D. Goodwin.

Inventor:  
William Harry Mattson  
by his Attorneys  
Horsman & Horsman



# UNITED STATES PATENT OFFICE.

WILLIAM HARRY MATTSON, OF PHILADELPHIA, PENNSYLVANIA.

## RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 470,943, dated March 15, 1892.

Application filed April 30, 1891. Serial No. 391,045. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HARRY MATTSON, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Rail-Fastenings, of which the following is a specification.

The object of my invention is to construct an improved rail-fastening for securing the rail to the road-bed.

My invention can be mounted on a chair, tie, or flat plate, depending upon the character of the railway.

In the accompanying drawings, Figure 1 is a perspective view of my improved rail-fastening with the parts detached. Fig. 2 is a plan view. Fig. 3 is a sectional elevation. Fig. 4 is an end view. Figs. 5, 6, and 7 are views of a modified form, and Fig. 8 is a view of a cross-tie with my improvements.

A is the rail. B is the body of the fastening, in the present instance in the form of a rail-chair. On this body is a projecting portion *b*, which extends up at one side of the rail and conforms thereto. The opposite side of the body is grooved at *c*, and adapted to slide in this groove is a block D. This block has a tongue *d*, which extends through the opening *b'* and under the bottom plate *b''*, on which rests the rail. The under side of this plate, as well as the tongue, are beveled. The block D has a portion *d'*, which passes over the bottom flange of the rail and preferably conforms thereto, so that as the block D is forced in the portion *d'* will not only force the rail toward the portion *b*, but will also draw the rail down tightly on its seat and firmly lock it in position.

E is a conical-headed bolt adapted to a conical recess *d''* in the block D, as clearly shown. This bolt is screwed into the body B, and is provided with a projecting cap, to which can be applied the wrench by which it is turned. As the bolt is screwed down it keeps the block to its seat and forces it at the same time against the rail. I am thus enabled to make a simple fastening for a rail, the parts being so combined that the rail is held tightly to the fastening both against lateral and vertical movement, and it will be noticed that the screw-bolt is a vertical bolt, which can be operated by a key held in

a vertical position, so that the track-walker can readily adjust the bolt of said fastening when necessary by simply using a socket-wrench and without stooping, and need not clear away the ballast around the chair, as is often done in chairs of the usual construction.

Instead of forming a head on the bolt E, a recess may be formed therein and a key-wrench may be used instead of a socket-wrench.

In Figs. 5, 6, and 7 I have shown a modification in which the tongue *d* is dispensed with, the block D in this instance being adapted to an undercut groove *c'*, as shown in Fig. 6, which prevents any vertical movement of the block. The screw-bolt E acts in the same manner as that shown in Fig. 1.

In some instances, as shown by dotted lines in Fig. 5, the screw-bolt E may be straight and the conical portion may be independent from the bolt in the form of a sleeve. By this means an ordinary screw-bolt can be used.

In Fig. 8 I have shown my invention as applied to metallic ties, the fastening being formed with the tie.

It will be understood that in some cases two or more bolts may be used, or two or more blocks may be used on a single chair or base-rail, as circumstances require.

I claim as my invention—

1. The combination, in a rail-fastening, of the base having a projecting portion adapted to one side of the rail, with guides on the opposite side, a block having a portion adapted to engage with the flange on the opposite side of the rail and to slide in said guideways, with a bolt having a conical portion adapted to force the sliding block toward the rail, substantially as described.
2. The combination, in a rail-fastening, of the base having a portion adapted to the rail, guides on the opposite side, a sliding block adapted to said guides and fitting the opposite side of the rail and confining the block to the base, and having an inclined portion, with a bolt provided with a tapered portion adapted to rest against the inclined portion of the sliding block, whereby on turning the bolt the block will be forced against the rail and secure the same rigidly to the chair, substantially as specified.

3. The combination, in a rail-fastening, of the base having a portion adapted to one side of the rail, a block D, having a portion adapted to the opposite side of the rail, said block D  
5 sliding in a recess in the base and having a tongue  $d$ , extending under the bottom plate  $b^2$ , said tongue being tapered, with a bolt having a tapered portion adapted to press the block toward the rail and force the tongue  $d$  under the bottom plate, substantially as and to for the purpose described.

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

WILLIAM HARRY MATTSON.

Witnesses:

HENRY HOWSON,  
H. F. REARDON.