

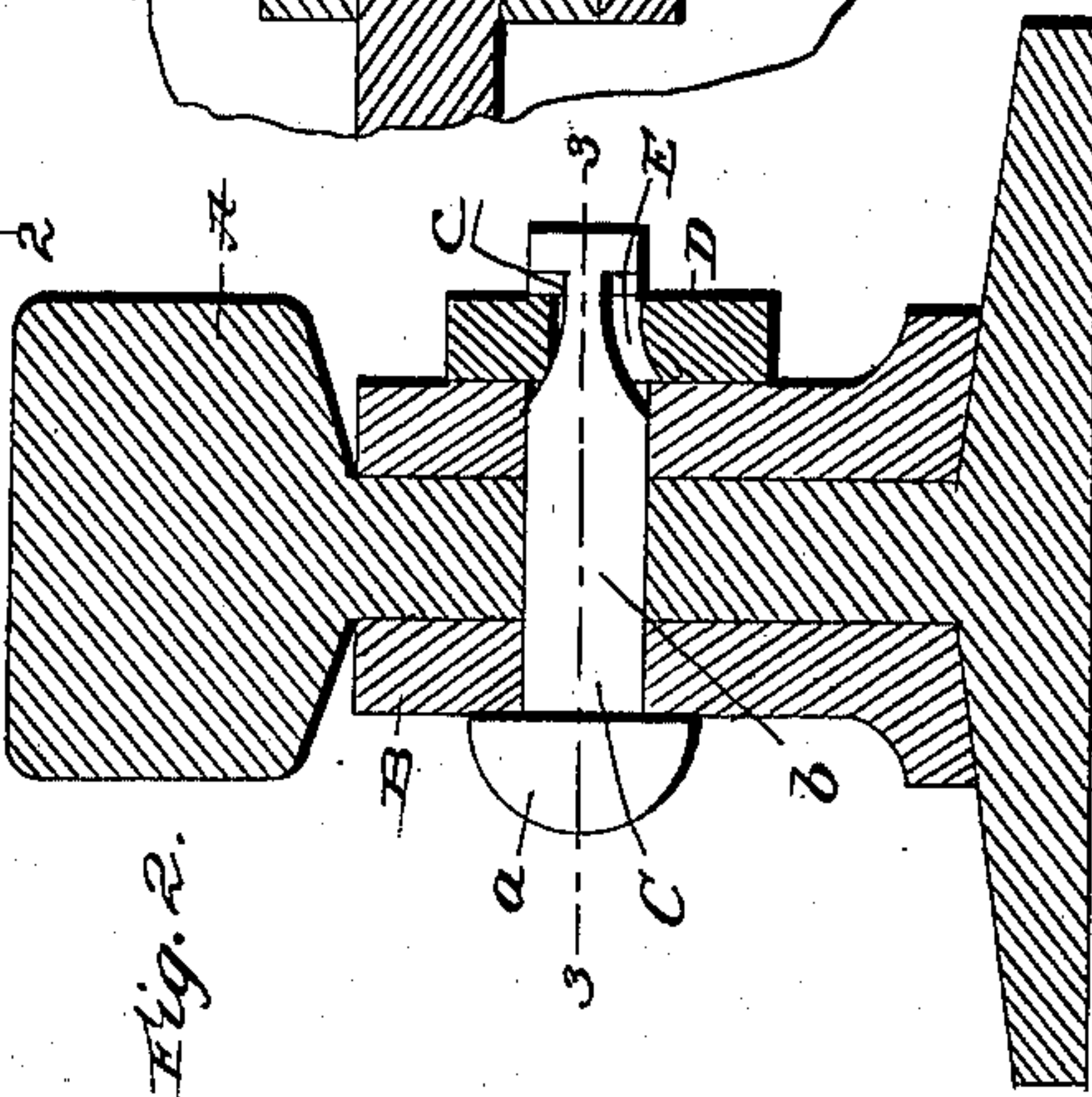
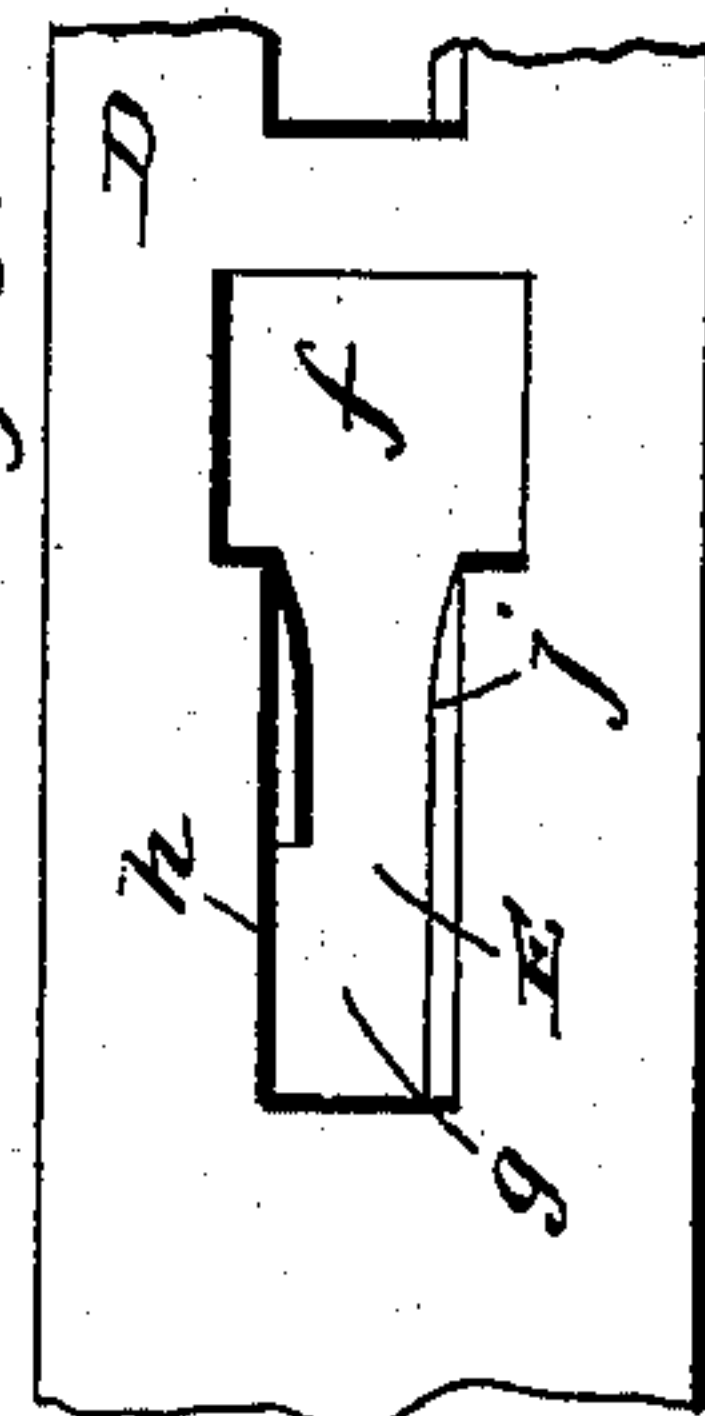
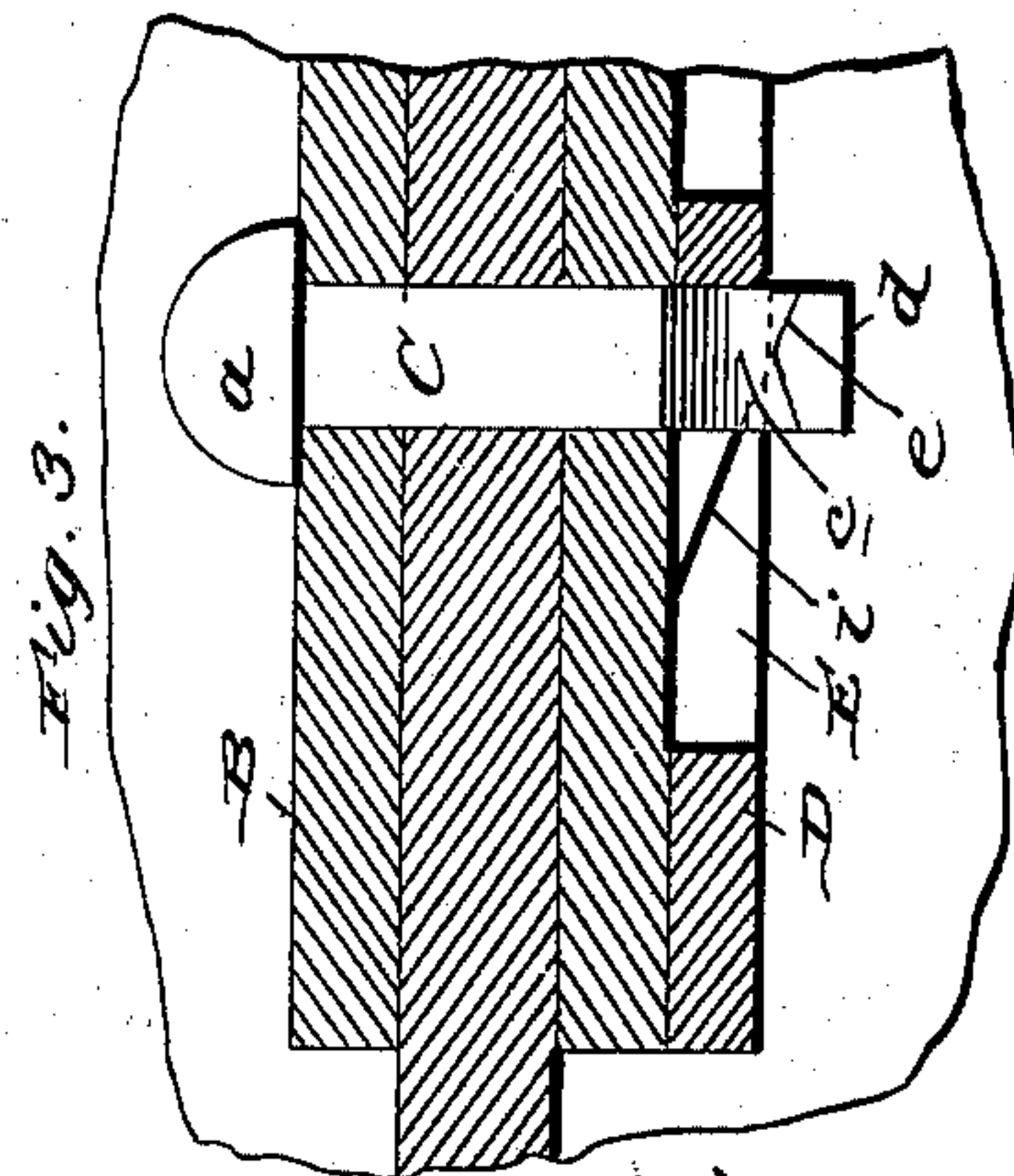
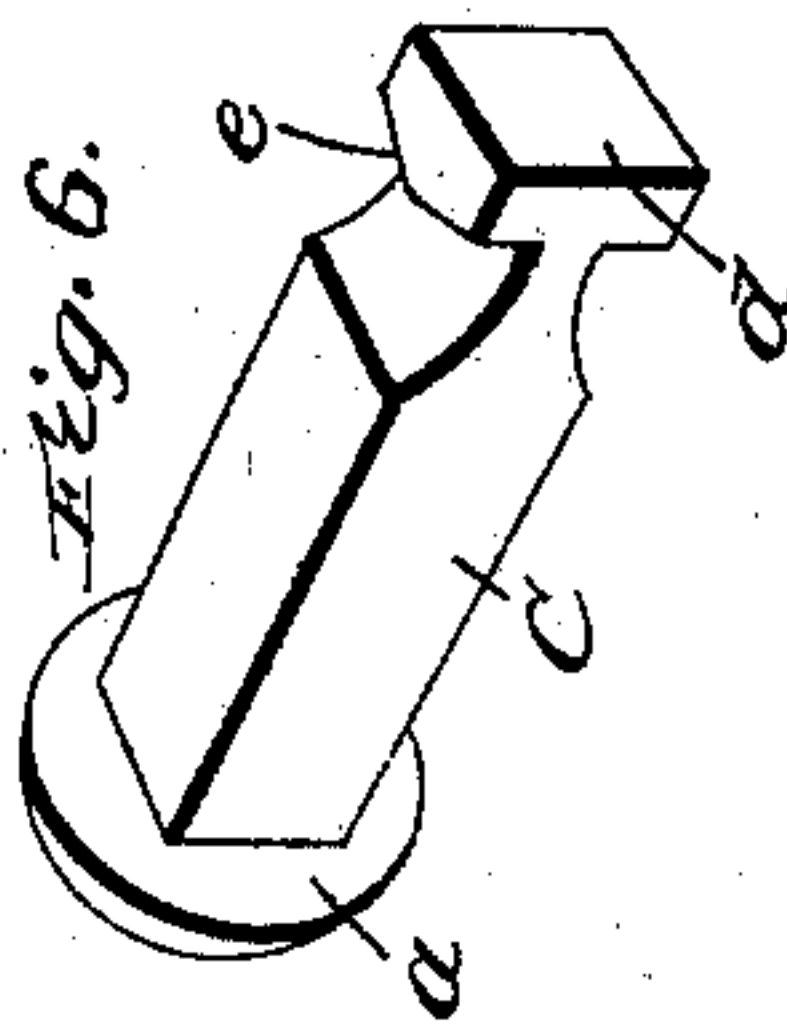
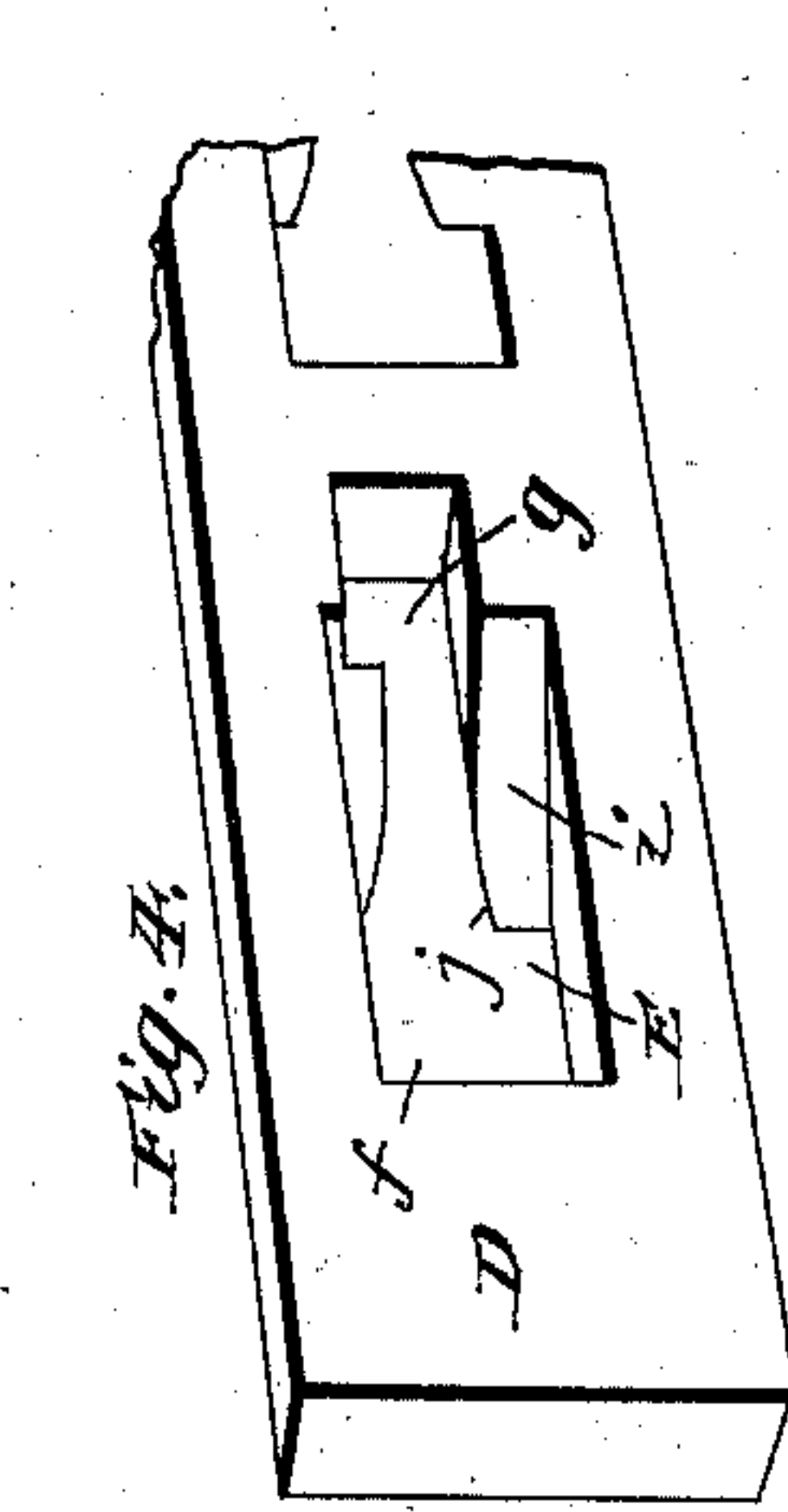
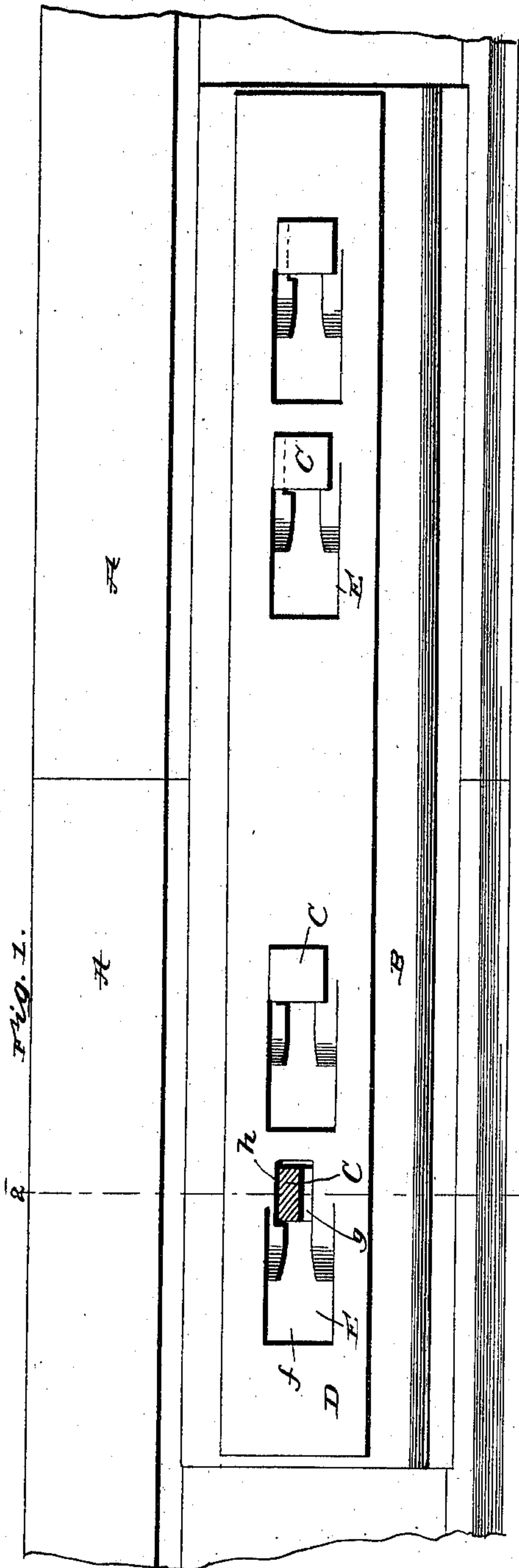
No. 647,321.

Patented Apr. 10, 1900.

J. I. NEWBURG.  
RAILWAY RAIL JOINT.

(Application filed June 15, 1899.)

(No Model.)



witnesses:

*C. H. Paeder*  
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# UNITED STATES PATENT OFFICE.

JOHN ISRAEL NEWBURG, OF VICKSBURG, MISSISSIPPI.

## RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 647,321, dated April 10, 1900.

Application filed June 15, 1899. Serial No. 720,677. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ISRAEL NEWBURG, a citizen of the United States, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented new and useful Improvements in Railway-Rail Joints, of which the following is a specification.

My invention relates to that class of railway-rail joints in which a key is employed in lieu of nuts to secure the connecting-bolts in position.

It consists in the peculiar and advantageous construction hereinafter described, and particularly pointed out in the claim appended.

In the accompanying drawings, Figure 1 is a side elevation of a rail-joint embracing my invention with one of the connecting-bolts in section. Fig. 2 is a transverse section taken in the plane indicated by the line 2 2 of Fig. 1. Fig. 3 is a detail horizontal section taken in the plane indicated by line 3 3 of Fig. 2. Fig. 4 is a broken perspective view showing the outer side of the connecting-key. Fig. 5 is a similar view showing the opposite side of the key. Fig. 6 is a perspective view of one of the connecting-bolts.

In the said drawings similar letters designate corresponding parts in all of the several views, referring to which—

A A are the meeting ends of two railway-rails.

B B are fish-plates disposed at opposite sides of the webs of the rails.

C C are connecting-bolts, and D is a locking-key. The bolts are headed at one end, as indicated by *a*, and have shanks *b*, of angular form in cross-section, passed through correspondingly shaped and registered apertures in the rails and fish-plates. Said bolts also have tapered reduced portions *c*, of oblong form in cross-section, adjacent to their opposite ends *d*. These ends *d* are preferably of rectangular form and have their inner sides beveled in opposite directions, as indicated by *e*, for a purpose presently to be described. The locking-key D is preferably of elongated rectangular form and in the present embodiment of the invention is shown as provided with four slots E to receive the ends of a corresponding number of bolts. These slots E are similar in construction, and therefore a description of the one shown in

detail in Figs. 4 and 5 will suffice for all. The said slot E comprises a large rectangular portion *f*, of a size to permit the loose passage of the end *d* of a bolt, and an elongated portion *g*, which is reduced in width as compared to the portion *f* and is provided with an upper offset *h* for a purpose presently described. The side walls of the reduced portion *g* are longitudinally inclined at one side of the key, as indicated by *i*, and are also beveled transversely at the opposite side of the key, as indicated by *j*, for purposes presently described.

In applying my improvements the meeting ends of the rails, the fish-plates, and the connecting-bolts are assembled, as shown in Figs. 1 and 2, and the ends *d* of the bolts are passed through the large portions *f* of the slots E in the key, and said key is made to rest on the reduced portions *c* of the bolts. With this done the key is moved endwise until the offsets *h* thereof are coincident with the reduced portions *c* of the bolts, when it is moved downward or permitted to gravitate, so as to seat the said reduced portions of the bolts in the offsets. By virtue of the weight of the key it is enabled to retain the reduced portions of the bolts in the offsets and is thereby securely held against casual endwise movement, which precludes casual loosening or displacement of any of the connecting-bolts and renders the joint strong and secure.

Incident to the stated endwise movement of the key the inclined planes *i* thereof ride under the beveled sides of the bolt ends *d*, and thereby draw the bolts tight and enable them to snugly hold the fish-plates against the webs of the rails, as is desirable.

It is not essential to bevel the inner sides of the bolt ends *d* in more than one direction; but I prefer to bevel them in opposite directions, as described, as it renders it unnecessary to exercise care in inserting the bolts.

By reason of the side walls of the slot portions *g* being beveled, as indicated by *j*, and the reduced portions *c* of the bolts being tapered, there is a tight engagement between the bolts and key when said key is moved inwardly, incident to its endwise movement, by the engagement of its inclined planes *i* with the beveled sides of the bolt ends *d*. Such tight engagement between the bolts and keys is desirable, since it practically prevents



casual movement of the key after the bolts are seated in the offsets thereof.

Having thus described my invention, what I claim is—

5 In the rail-joint described, the combination of the rails, fish-plates disposed at opposite sides of the webs of the same, headed connecting-bolts extending through coincident apertures in the rails and fish-plates and having end portions *d* beveled at their inner sides  
10 and also having tapered, reduced portions *c* adjacent to said end portions, and a key having the slots *E* comprising the portions *f* and the portions *g* flared at the inner side of the

key, as indicated by *j*, and also having the 15 upper offsets *h* communicating with the slot portions *g*, and the inclines *i* in its outer side at opposite sides of the slot portions *g*; the said inclines *i* extending from the slot portions *f* to the outer face of the key, substantially as specified. 20

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN ISRAEL NEWBURG.

Witnesses:

GUSTAV SINA,  
SOL BROWN.