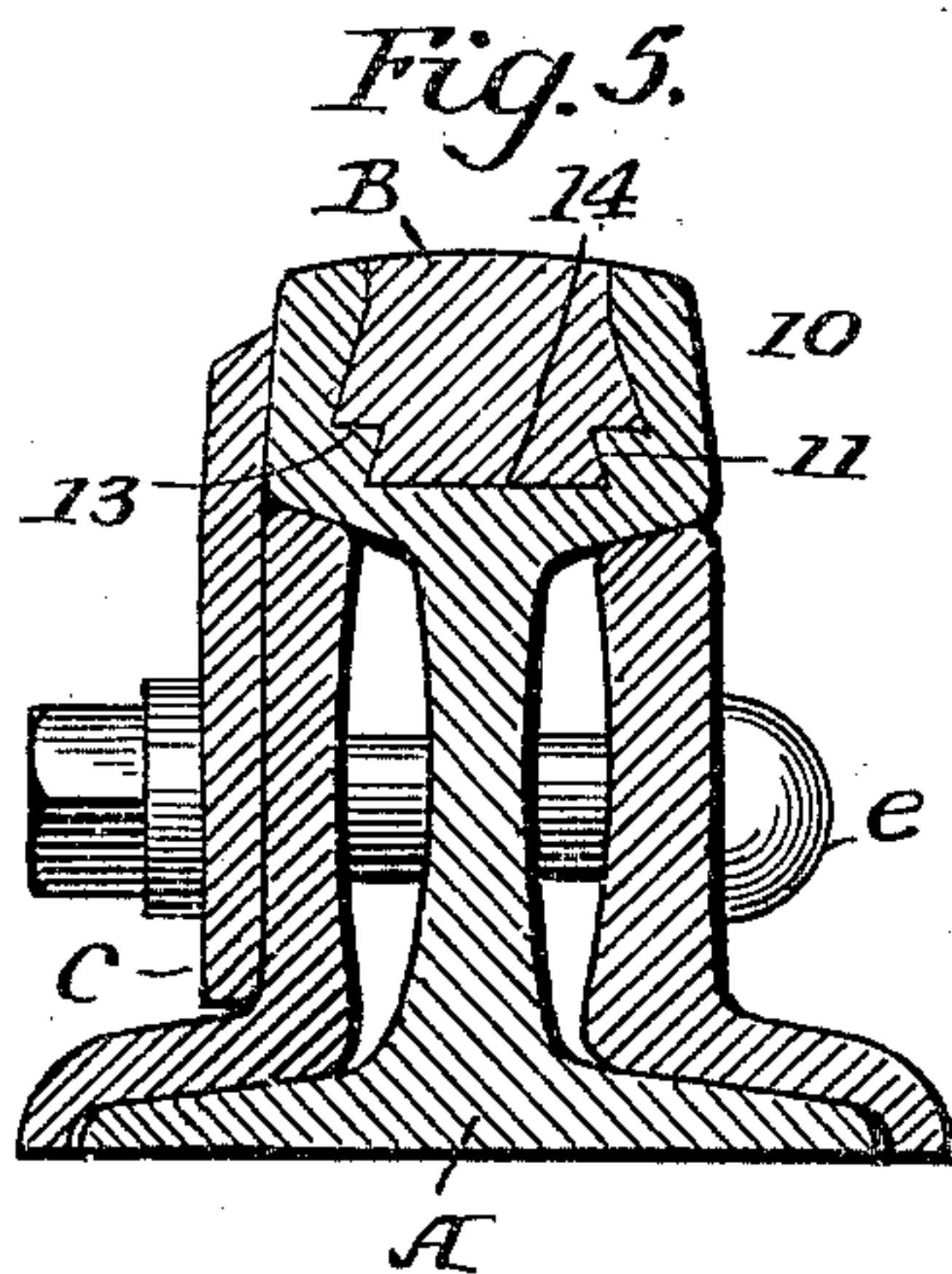
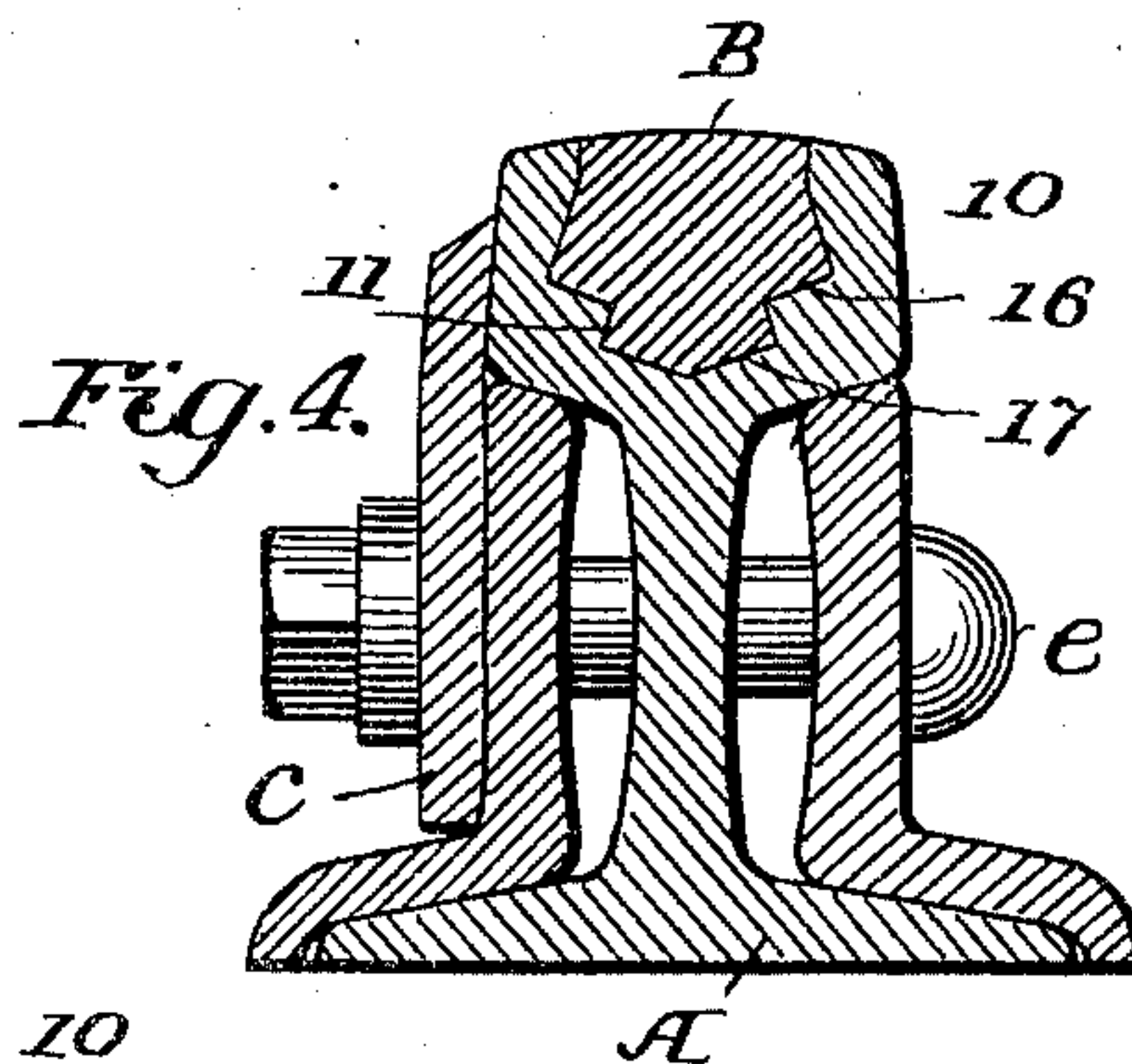
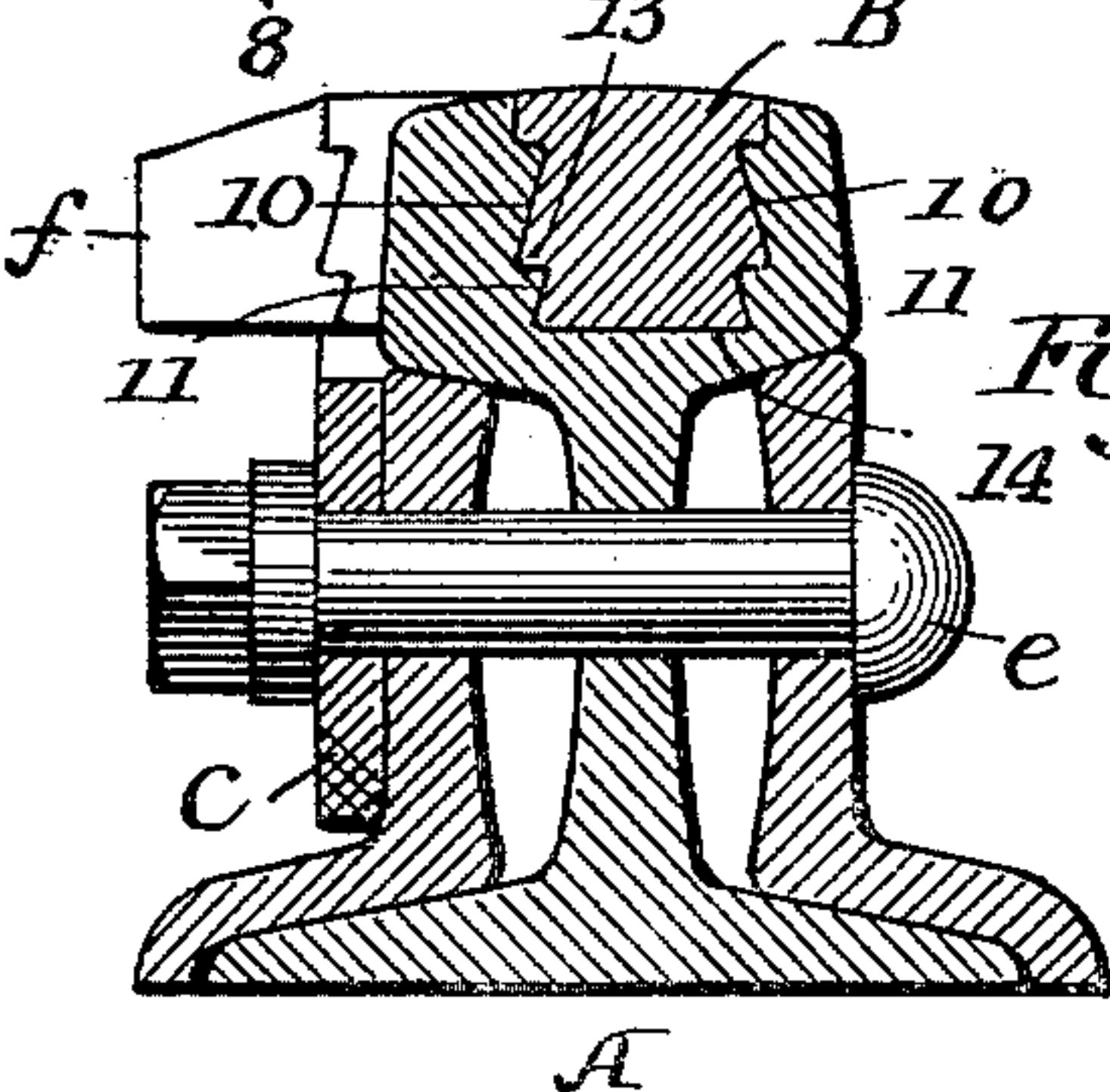
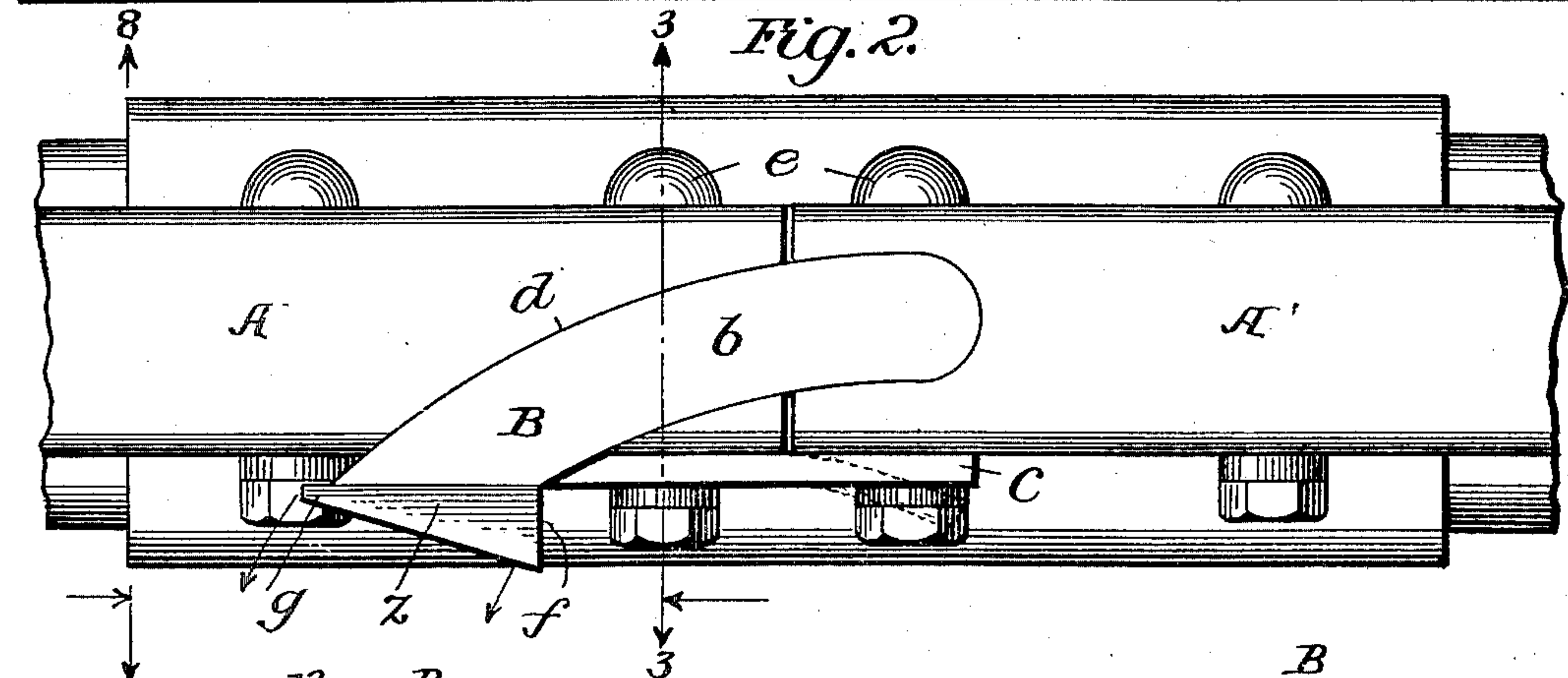
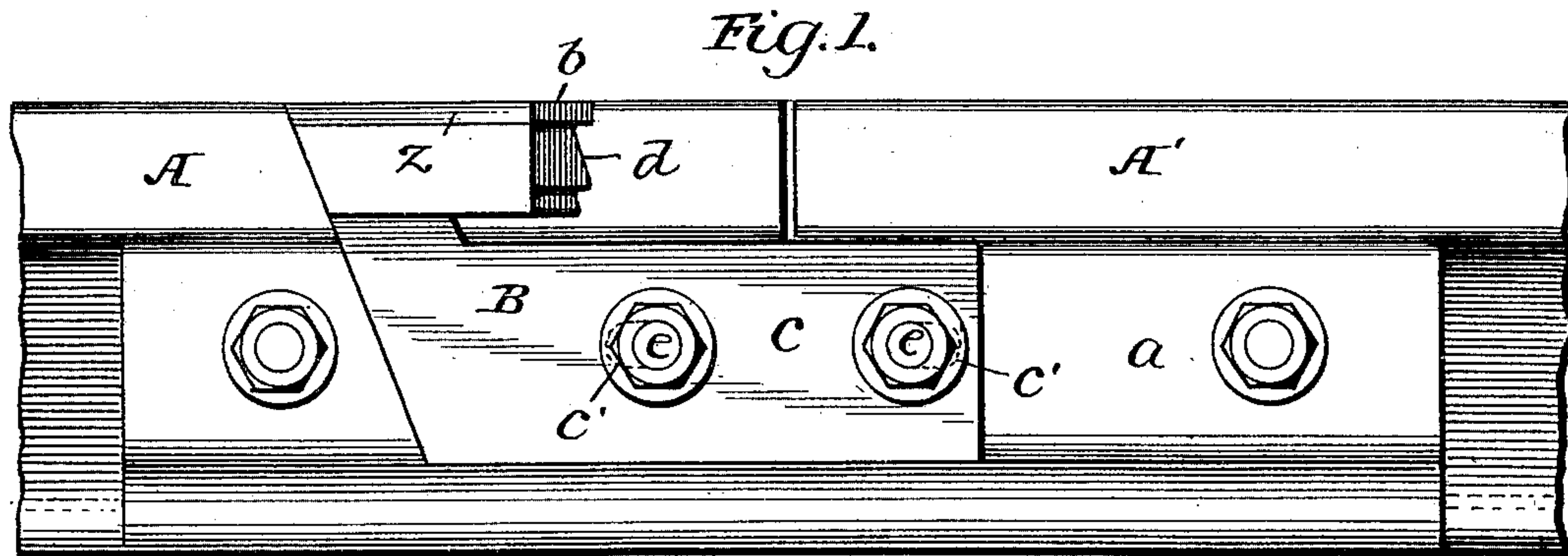


K. KOHN.  
RAIL JOINT.

(Application filed Dec. 17, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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No. 706,241.

Patented Aug. 5, 1902.

K. KOHN.  
RAIL JOINT.

(Application filed Dec. 17, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 6.

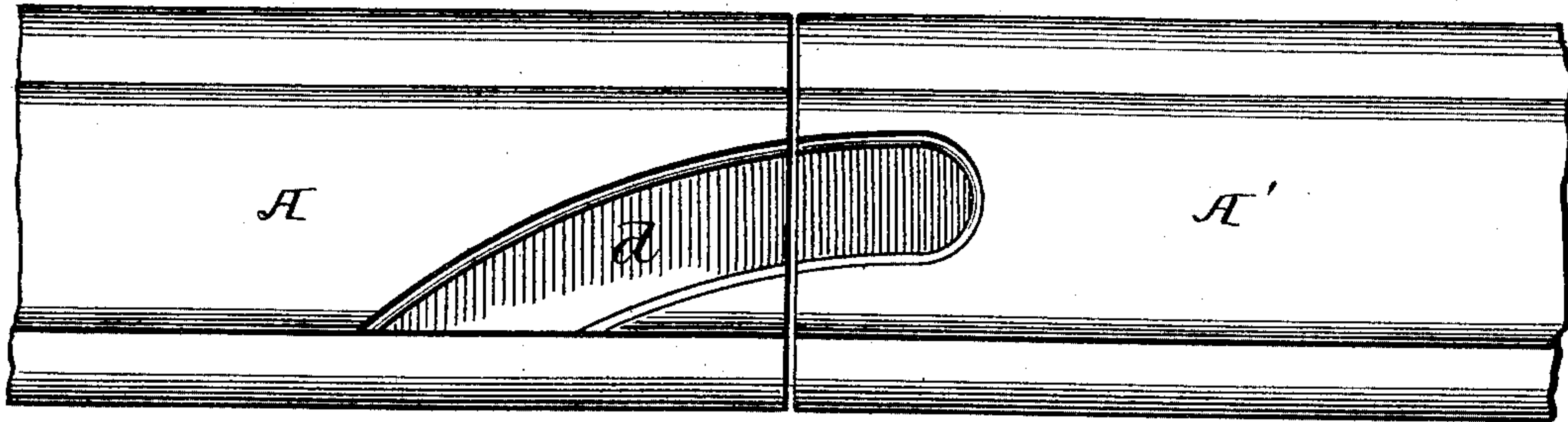


Fig. 7.

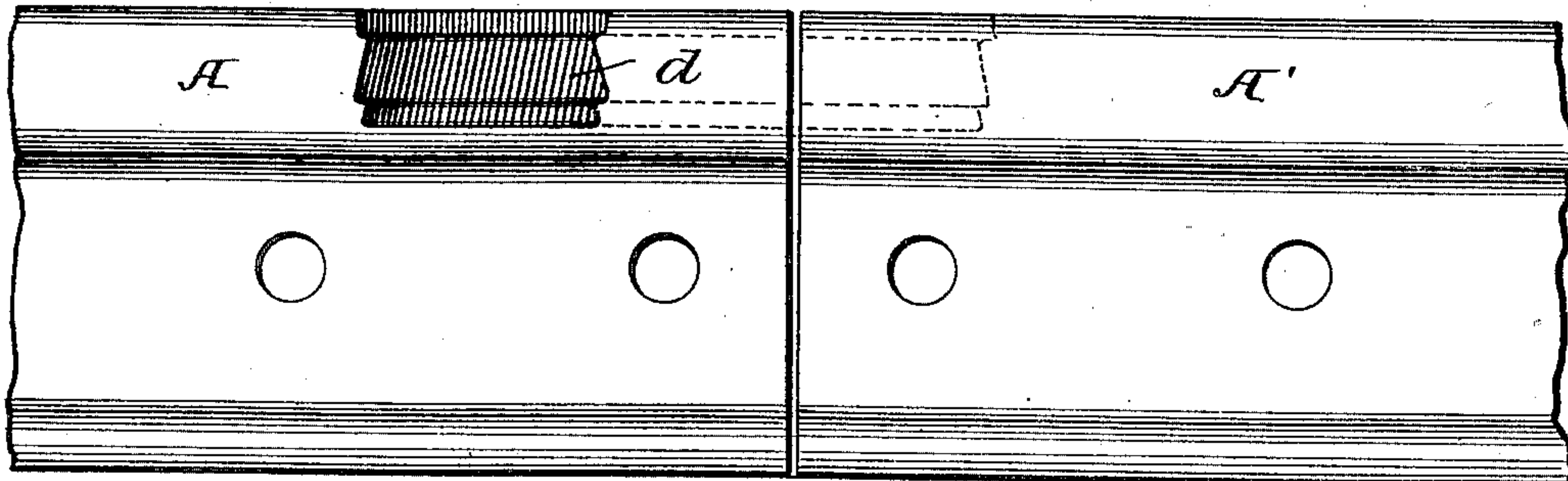
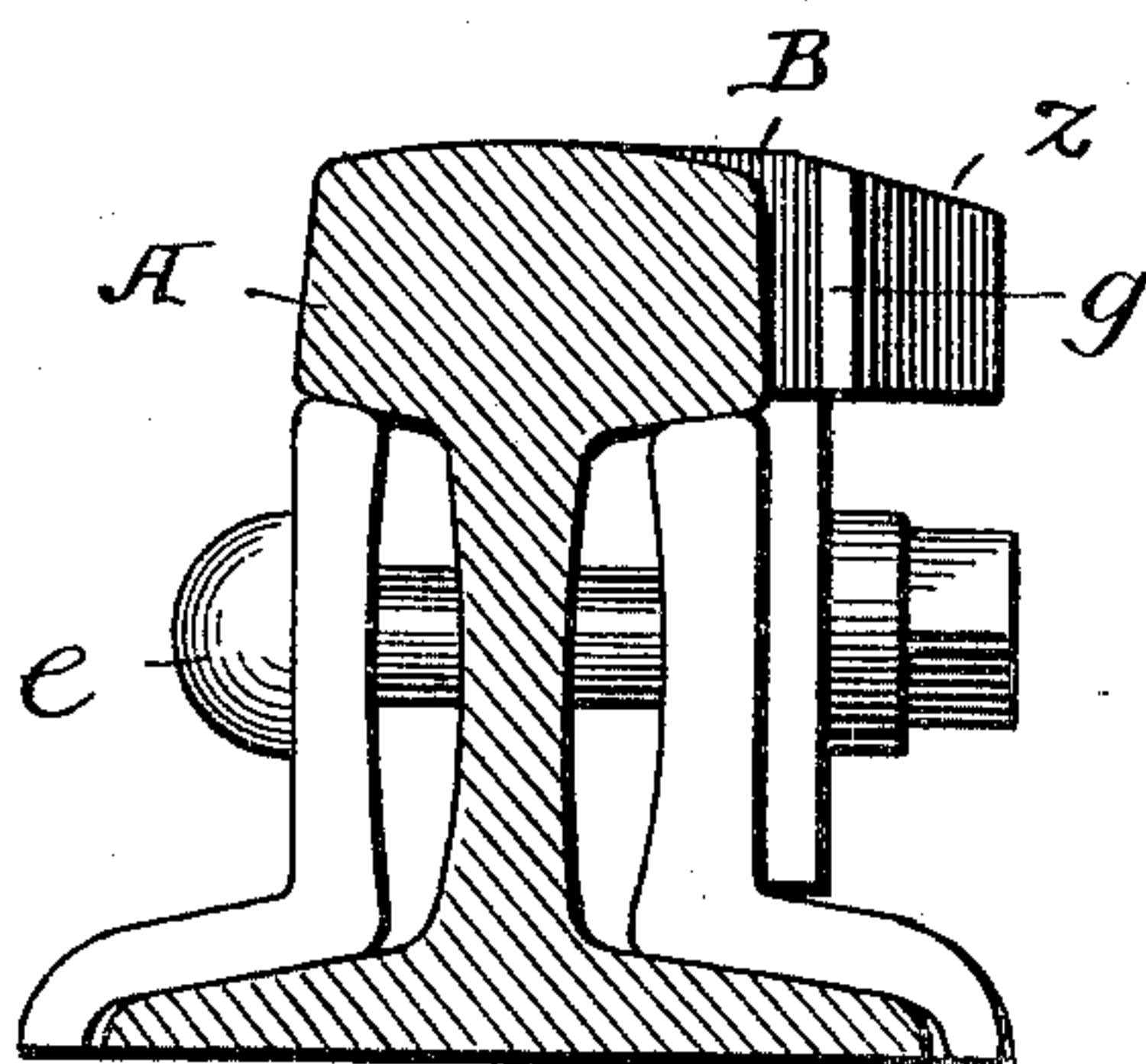


Fig. 8.



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# UNITED STATES PATENT OFFICE.

KOBY KOHN, OF LINCOLN, NEBRASKA.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 706,241, dated August 5, 1902.

Application filed December 17, 1901. Serial No. 86,279. (No model.)

*To all whom it may concern:*

Be it known that I, KOBY KOHN, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to railroad-rail connections; and the object of the invention is to provide an improved connection for the adjacent ends of rails which will prevent the ends of the rails from being battered and destroyed by the wheels of a train passing over them and will also prevent the jarring of the train so frequently caused by the pounding of the wheels when crossing the joint of two rails not equipped with proper connections.

My improved connection can be applied to track-rails already laid without interfering with the traffic over such rails.

The invention will be fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a pair of rails with my improved connection applied thereto. Fig. 2 is a top plan view of the same. Fig. 3 is a section on the line 3 3 of Fig. 2. Figs. 4 and 5 are vertical transverse sections showing slight modifications in the form of the connection. Fig. 6 is a top view; Fig. 7, a side view of the rails, showing the groove or recess to receive the connection. Fig. 8 is a section on the line 8 8 of Fig. 2.

The rails are indicated by A and A' and are connected at their adjacent ends by the usual fish-plates a.

The connection as I have designed it is indicated as a whole by B, and consists of the curved bar b and the side plate c, preferably integral with the bar, although it may be made separately and be rigidly connected to the bar. Preferably the connection will be of malleable steel; but other suitable malleable metal may be employed. Cross-sectionally the curved bar b will preferably have inclined surfaces on each vertical side, two on each side, being indicated in Figs. 3, 4, and 5 by 10 and 11. Obviously, however, one inclined surface only on each side may be employed, the object of such surfaces being to prevent vertical movement of the connection relative to the rails. Otherwise the shape of bar cross-

sectionally may be varied in many ways, and it may have horizontal bearing-surfaces (indicated by 13 and 14 in Figs. 3 and 4) or inclined bearing-surfaces, (indicated by 16 and 17 in Fig. 5,) and the inclined surfaces 10 and 11 may join the bearing-surfaces either in a curved line, as shown in Fig. 3, or in a well-defined angle, as shown in Figs. 4 and 5. Whatever may be the cross-sectional form of the bar b, the groove in the rails will be cross-sectionally of the same form. Such groove is indicated by d in Figs. 6 and 7, and, as shown, it is open at the top and starts from the outer side of one rail and enters the other rail about midway its width. It is curved to correspond to the curvature of the bar b and is of such depth that when the bar b is inserted the upper surface of the latter will be flush with the upper surface of the rails, and the bar b is also intended to fit tightly in the groove. When first made, the plate c may be curved, as indicated in dotted lines in Fig. 2, this being necessary in order to permit the bar b to be inserted in the groove d, and when the bar is fitted in the groove the plate c will be straightened out and lie against the outer fish-plate, and the plate is provided with elongated holes c' for the passage of the bolts usually employed for connecting the fish-plates and rails together. Obviously the plate c may be made straight when the device is first manufactured and be subsequently bent to enable the bar b to be inserted. The plate c may vary in depth, it being shown in Figs. 1 and 3 as extending to the under side of the tread portion of the rails and in Figs. 4 and 5 as extending to near the top surface of the rails.

It is necessary to make provision for the withdrawal of the connection from the rails, and while various means may be provided for this purpose I prefer to have the bar b extend beyond the plate c at substantially a right angle on one side to form a bearing-surface f and to provide a lug g on the opposite side of the bar. To remove the connection, the nuts must first be removed from the bolts e and the plate c be bent outwardly, as indicated by the dotted lines in Fig. 2. If now a bar be used exerting its force against the surface f in the direction of the arrow x and against the lug g in the direction of the



arrow  $y$ , the bar  $b$  will be forced out of the groove. It will also be observed that the outer end of the bar  $b$  is cut on substantially a right angle to the curvature of the bar, and this is important, as it enables force to be applied to the end of the bar in the most advantageous manner to force the bar  $b$  into the groove without causing unequal friction on the sides of the bar. Preferably also the part of the bar  $b$  which projects beyond the rail will be cut away at its upper surface, as indicated at  $z$  in Fig. 8, this being for the purpose of preventing a grooved wheel engaging said projecting part.

It is important to prevent corrosion of the bar  $b$  and the surface of the groove  $d$  in the rails, and to accomplish this the surfaces of the grooves, the sides, and the upper and lower surfaces of the bar will preferably be coated with a waterproof composition, or the bar  $b$  may be galvanized, copper or nickel plated, or otherwise metallically or chemically protected against corrosion.

The groove  $d$  may be formed in the rails by a milling or other cutter of the proper shape, and such cutter may be mounted upon a frame adapted to be secured to the rails or to the ties of a track already laid, and the application of my improved connection to rails already laid may be accomplished without disturbing the track or interfering with traffic over the rails.

Without limiting myself to the precise details of construction illustrated and described, I claim—

1. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, and a curved bar fitted into said groove, substantially as set forth.

2. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, and a curved bar fitted into said groove, said groove and bar having inclined surfaces on their sides, to prevent vertical movement of the bar in the groove, substantially as set forth.

3. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, a curved bar fitted into said groove, and means to secure the bar to the rails, substantially as set forth.

4. The combination of two rails arranged

end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, and a curved bar, fitted into said groove, said bar having surfaces at its outer end against which a tool may bear to force the bar out of the groove, substantially as set forth.

5. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, a curved bar fitted into said rail and a plate rigidly connected to the bar to lie parallel with said rails and be secured thereto, substantially as set forth.

6. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, a curved bar fitted into said groove, and a coating on said bar to prevent corrosion, substantially as set forth.

7. The combination of two rails arranged end to end and provided with a curved open-topped groove opening out at one side of one rail and extending into the other rail, a curved bar fitted into said groove, and a coating on said bar and on the surface of said groove to prevent corrosion, substantially as set forth.

8. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at the side of one rail and extending into the other rail, fish-plates and bolts to connect said rails, a curved bar fitted into said groove, a plate rigidly connected to said bar and lying against one of said fish-plates, said bar being provided with openings for the passage of said bolts, substantially as set forth.

9. The combination of two rails arranged end to end and provided with a curved, open-topped groove opening out at one side of one rail and extending into the other rail, and a curved bar fitted into said groove and out from the open end thereof, said projecting portion being cut away to bring its upper surface below the upper surface of the rail, substantially as set forth.

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

KOBY KOHN.

Witnesses:

ERNEST C. FOLSOM,  
FRANK DU FEIL.