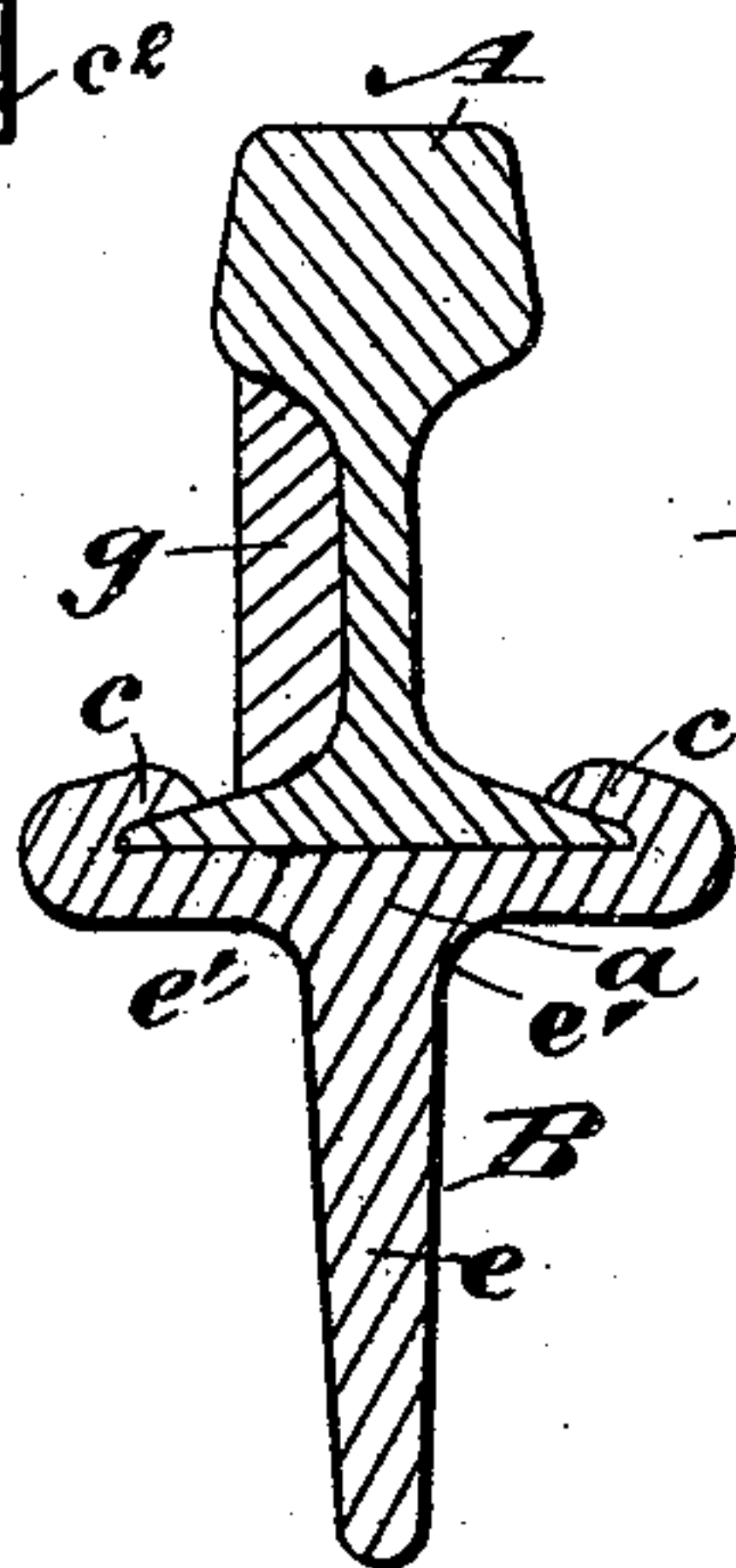
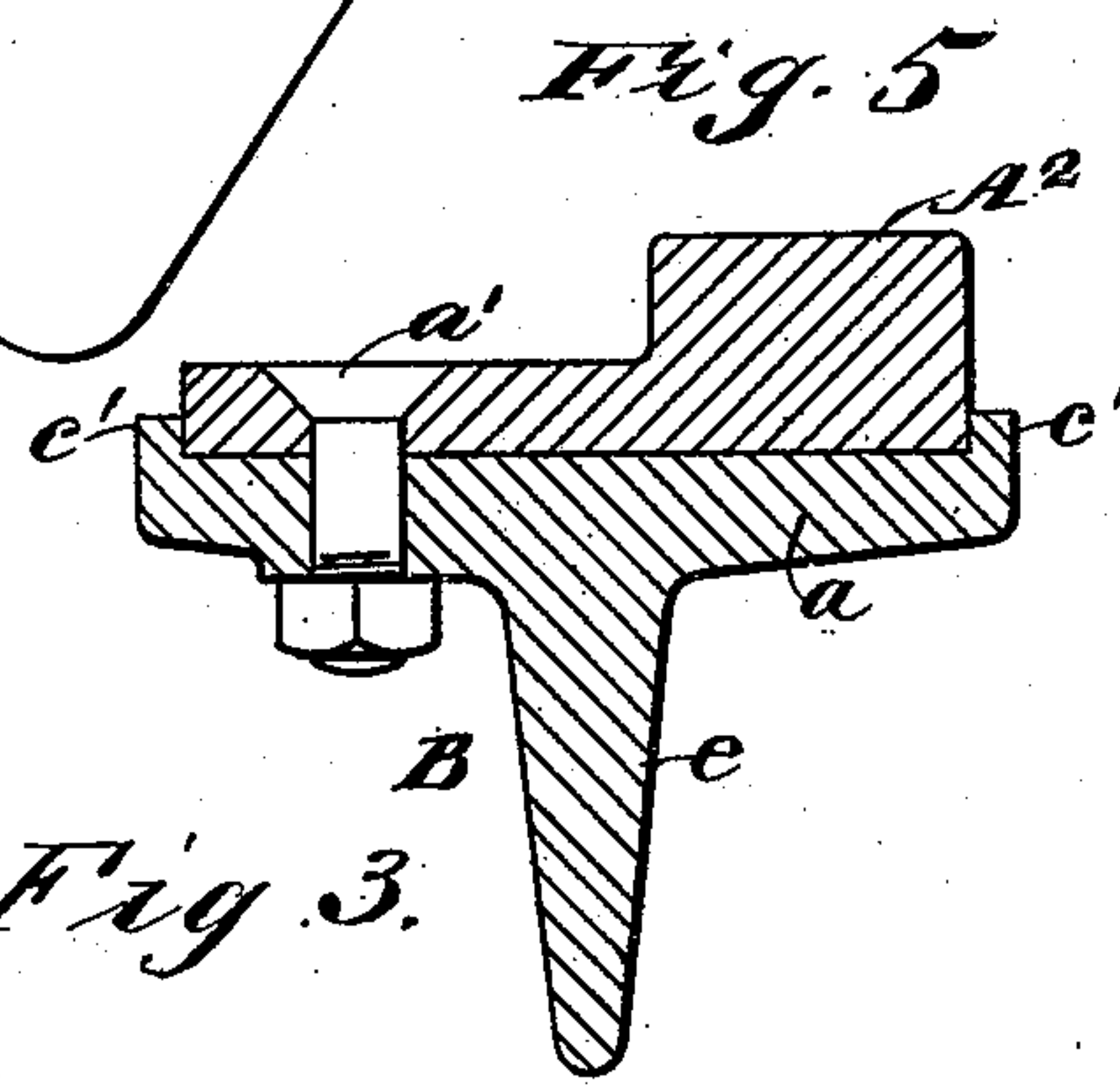
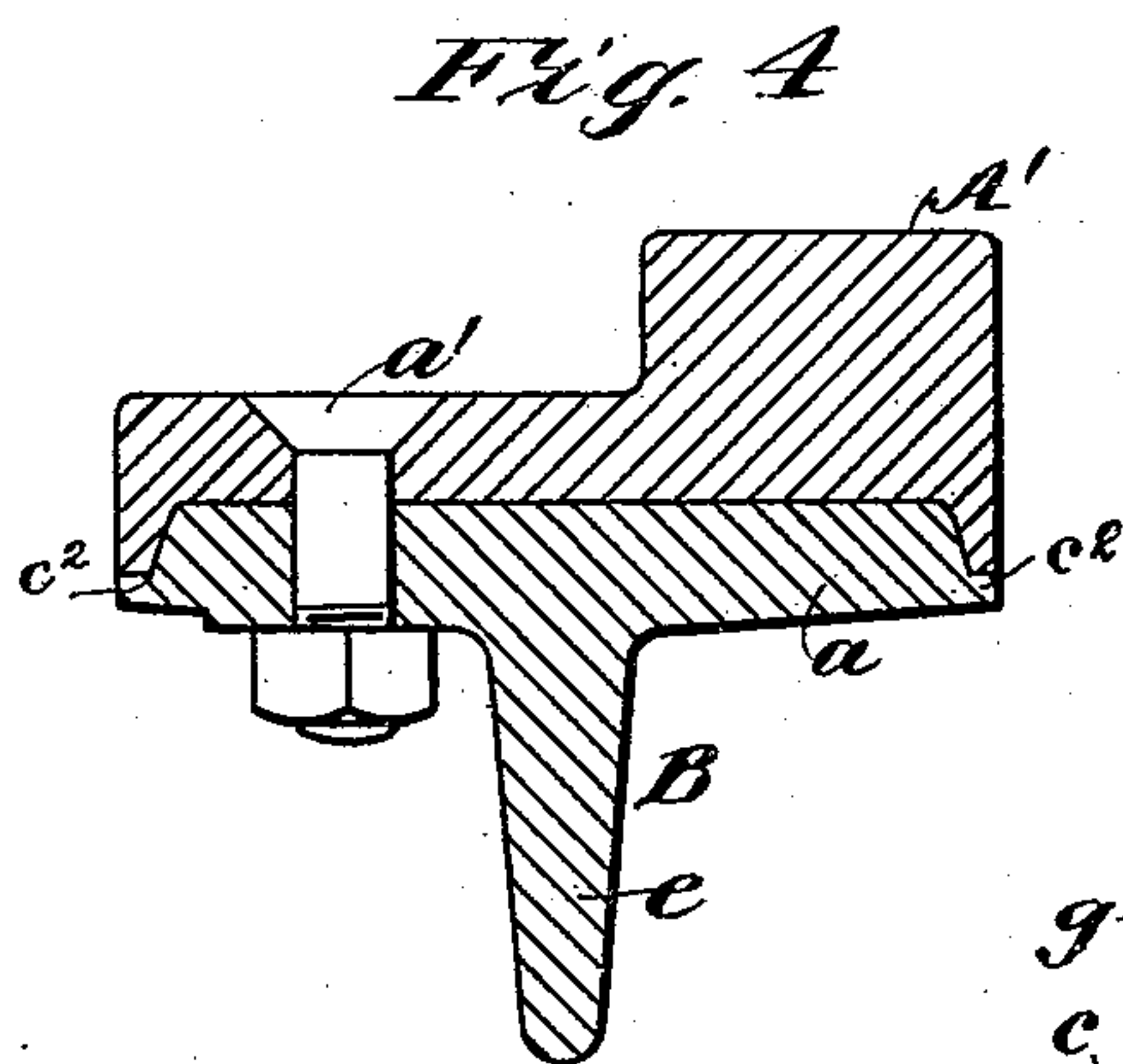
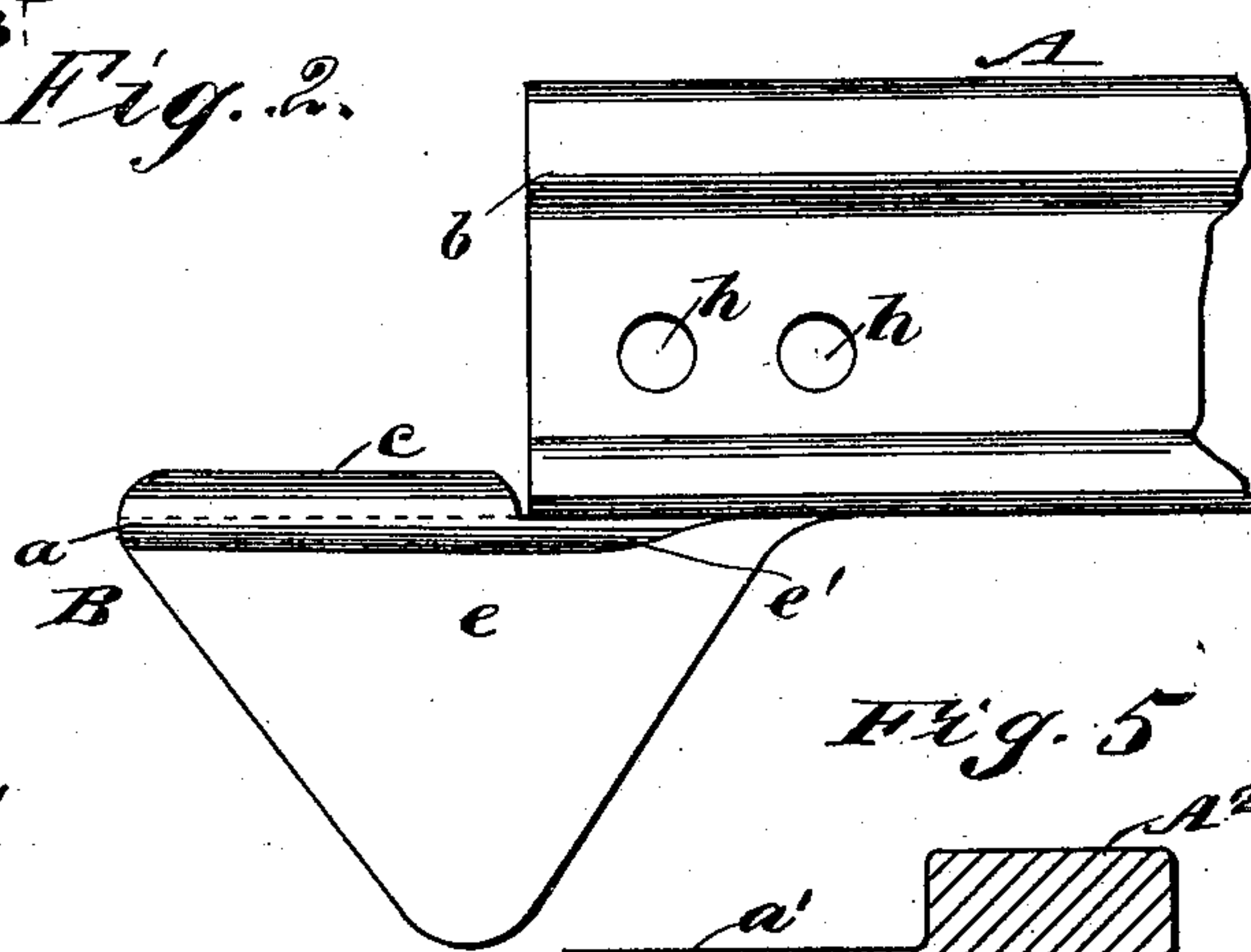
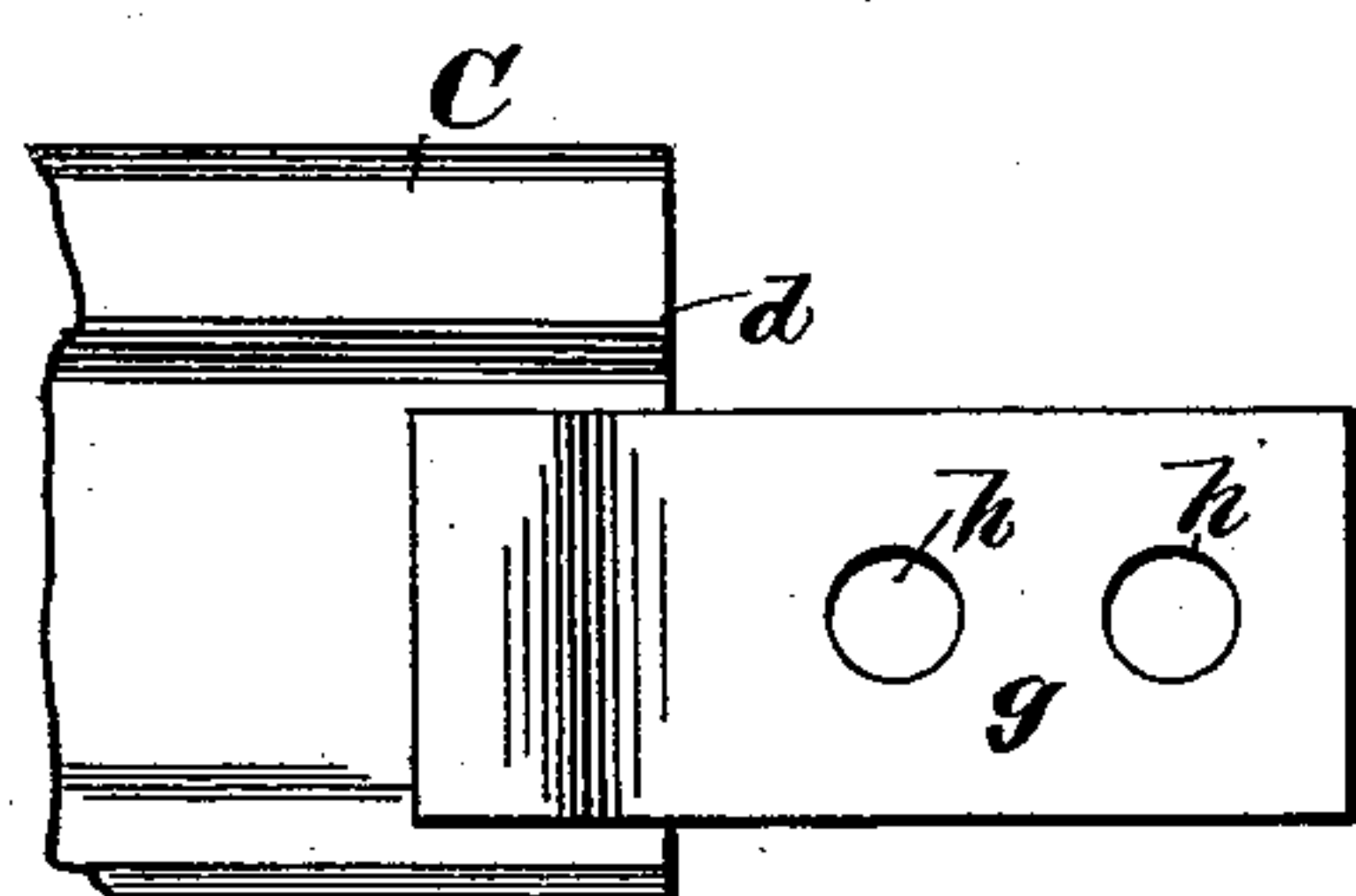
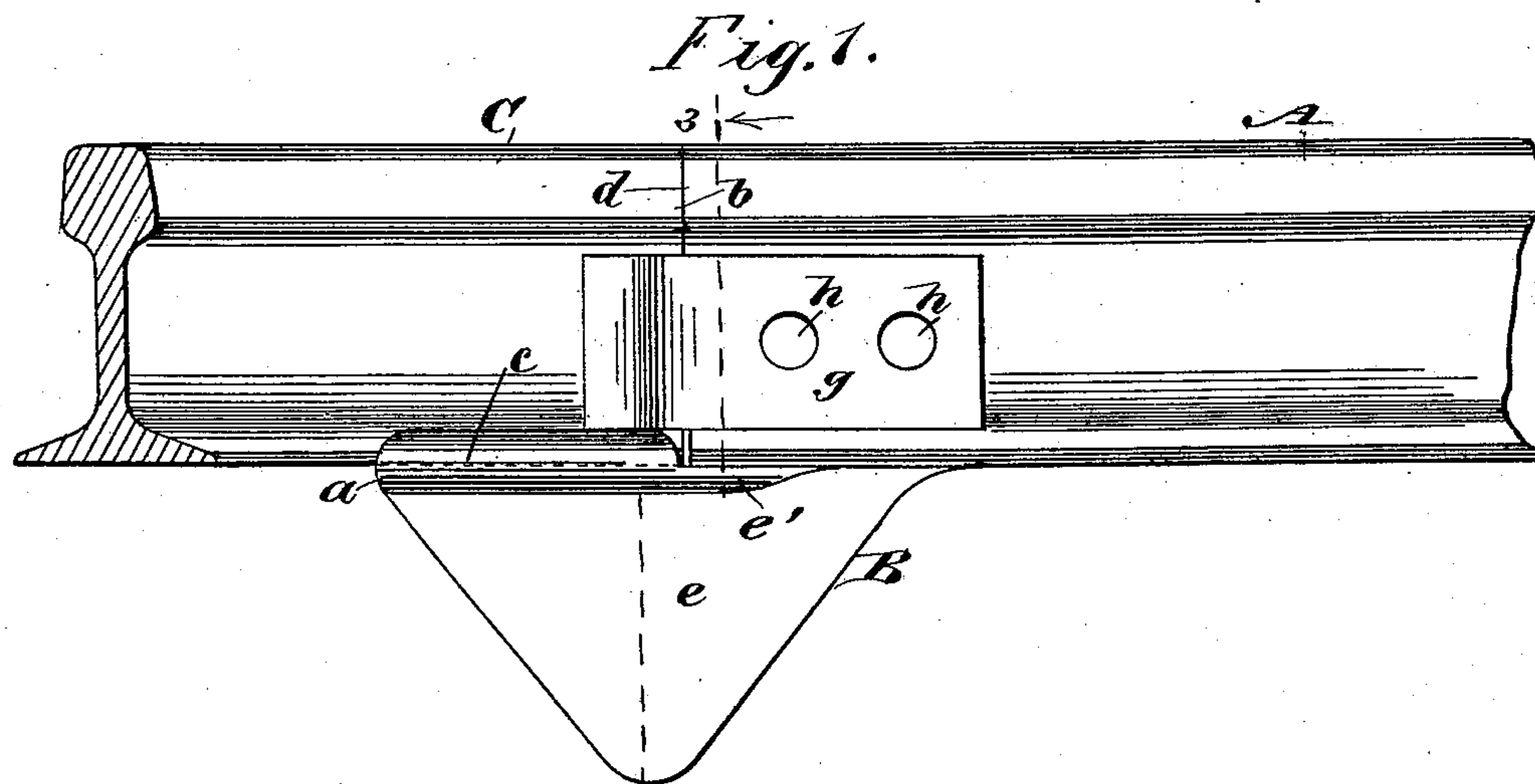


(No Model.)

J. H. CAMPBELL.
RAIL JOINT AND CHAIR.

No. 483,898.

Patented Oct. 4, 1892.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOSEPH H. CAMPBELL, OF CHICAGO, ILLINOIS.

RAIL JOINT AND CHAIR.

SPECIFICATION forming part of Letters Patent No. 483,898, dated October 4, 1892.

Application filed April 15, 1892. Serial No. 429,283. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. CAMPBELL, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Rail Joint and Chair, of which the following is a full, clear, and exact description.

My invention relates to improvements in rail-joints, and particularly to such as are employed to join the ends of railroad-track rails, the object being to provide a simple, strong, and durable joint and chair for rails which will be composed of the fewest number of parts possible and be adapted to sustain joined rails where united, so as to prevent vertical or lateral displacement of the rail ends.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of two rails broken away at one end of each and joined by the improved rail connection. Fig. 2 is a side view of parts shown in Fig. 1 detached. Fig. 3 is a cross-section on the line 3 3 in Fig. 1. Fig. 4 is a cross-section of the device adapted to sustain a flat rail, and Fig. 5 is a modified form of the chair adapted to sustain another style of the flat rail.

The rails to be joined for the formation of a continuous track may be of any suitable pattern and weight, either a T or a flat rail. At one end *b* of a rail *A* an integral shoe or chair *B* is formed by any suitable method, which shoe comprises a base-flange *a*, that is projected in advance of the rail end *b*, the upper surface of the base-flange coinciding with the plane of the lower face of the rail-base, as indicated by a dotted line in Fig. 2. The side edge portions of the base-flange *a* are return-bent, so as to produce lip-flanges *c*, which are adapted to permit the sliding introduction of the base of another rail end *d* between them and have a close bearing thereon, as represented in Fig. 3. The form of the lip-flanges may also be modified, so as to give a square shoulder, if desirable, as at *c'* in Fig. 5, or the base-flange may be left level on the top surface or rabbeted on the edge, as shown at *c*²

in Fig. 4, to suit the two styles of flat rails *A'* *A*² shown in said figures. Upon the lower surface of the base-flange *a*, near its transverse center, a depending rib *e* is integrally formed, there being coved fillets *e'* produced at the junction - corners, which serve to strengthen the parts.

The rib *e* is preferably shaped as shown in Fig. 2—that is, having greatest depth at a point near the end of the rail whereon it is formed and extending below the base of said rail to insure a proper bond between the base-flange and rail end from which the flange projects, the return-bent lip-flanges *c* or square shoulders commencing at the end *b* of the rail *A*, so that another rail end *d* not provided with the base-flange *a* may be caused to impinge upon the rail end *b*, as shown in Fig. 1.

The rail *C*, which is designed to engage its end with the base-flange *a*, is preferably furnished with an integral fish-plate *g*, that is projected in advance of the rail end *d* and adapted to loosely bear with its adjacent side upon the web of the rail *A* when the two rails are joined. Both holes *h* are formed in the fish-plate *g* and rail *A*, which align and form continuous passages for bolts that are preferably employed to prevent a longitudinal creeping movement of individual rails. Said bolt-holes may also be made oblong, if desired or when it is not desired to retain the rails in rigid connection with each other.

It will be understood that the ends of track-rails will be constructed one as shown on rail *A* and the other as represented on rail *C*, which will enable a continuous track to be laid with rails having the improvement.

It is claimed for this invention that the provision of an integral shoe or chair on one end of a track-rail and an integral fish-plate on the other end of the rail effects a reduction of wearing-joints by lessening their number, greater strength being afforded with the same weight of metal. Furthermore, the peculiar construction of the shoe or chair permits the use of a minimum weight of metal to obtain the maximum of strength, which is afforded at a point where the greatest strain is imposed.

If desired, integral fish-plates may be placed at each end of the rail; but ordinarily this will be unnecessary, owing to the peculiar construction of this joint connection for rails.

The securing-bolts applied to the fish-plate are not subjected to lateral strain, as the lip-flanges on the integral shoe resist lateral movement of the joint, while the rib on said shoe
5 reinforces its base-flange to sustain a heavy load; or the fish-plates may be dispensed with, if necessary, to accommodate rails of other shapes and the shoe only used, or the shoe may be dispensed with and the fish-plates
10 only used.

When the improvement is applied to flat rails, as shown in Figs. 4 and 5, the integral chair B alone is supplied, whereon the end of an adjacent rail is imposed and secured with
15 screw-bolts *a'*, provided with suitable nuts, as shown.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

20 1. A rail having an integral shoe or chair formed longitudinally on one end and projecting therefrom to engage the end of another rail, the side edges of the shoe base-flange being return-bent and forming lip-flanges or
25 square shoulders which envelop the base-flanges of said latter-named rail, substantially as described.

2. A rail having an integral return-bent flanged shoe on one end and an integral lat-

erally-formed fish-plate on the other end of 30 said rail, substantially as described.

3. A rail having an integral shoe projected longitudinally from one end and comprising a base-flange, a rib depending from the base-flange, and return-bent lip-flanges or square 35 shoulders on the side edges of the base-flange, substantially as described.

4. A rail having an integral shoe projected longitudinally from one end and comprising a base-flange aligning at its top face with the 40 bottom of the track-rail, a rib depending from the base-flange and cove-filleted where it joins the base-flange, and return-bent lip-flanges or square shoulders on the side edges of the base-flange, substantially as described. 45

5. The combination, with a track-rail having an integral shoe or chair thereon at one end adapted to interlock with the base of another track-rail, of a track-rail having an integral fish-plate thereon at one or both ends 50 and adapted to bear on the web of the end of the first-named rail, substantially as described.

JOS. H. CAMPBELL.

Witnesses:

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