

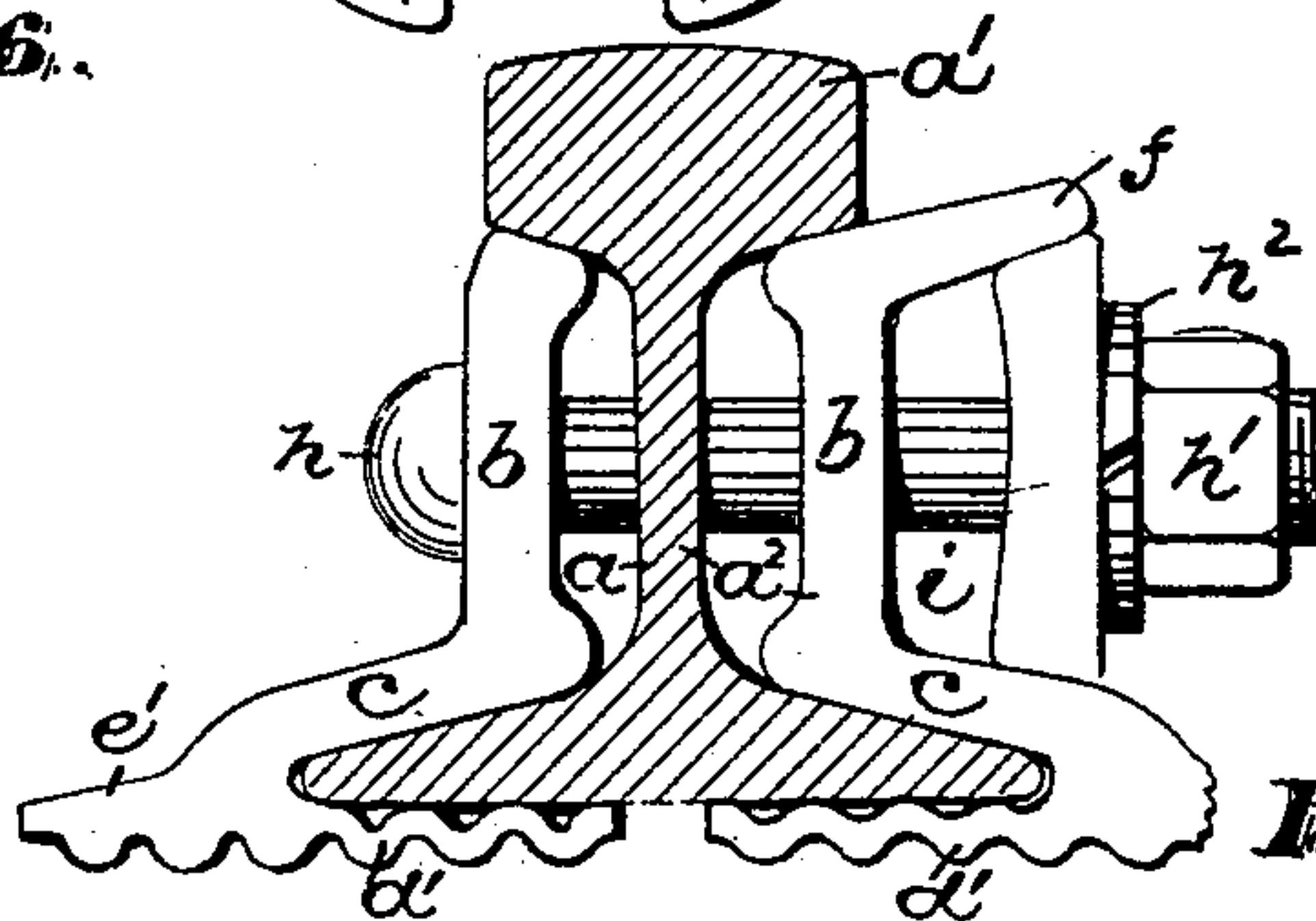
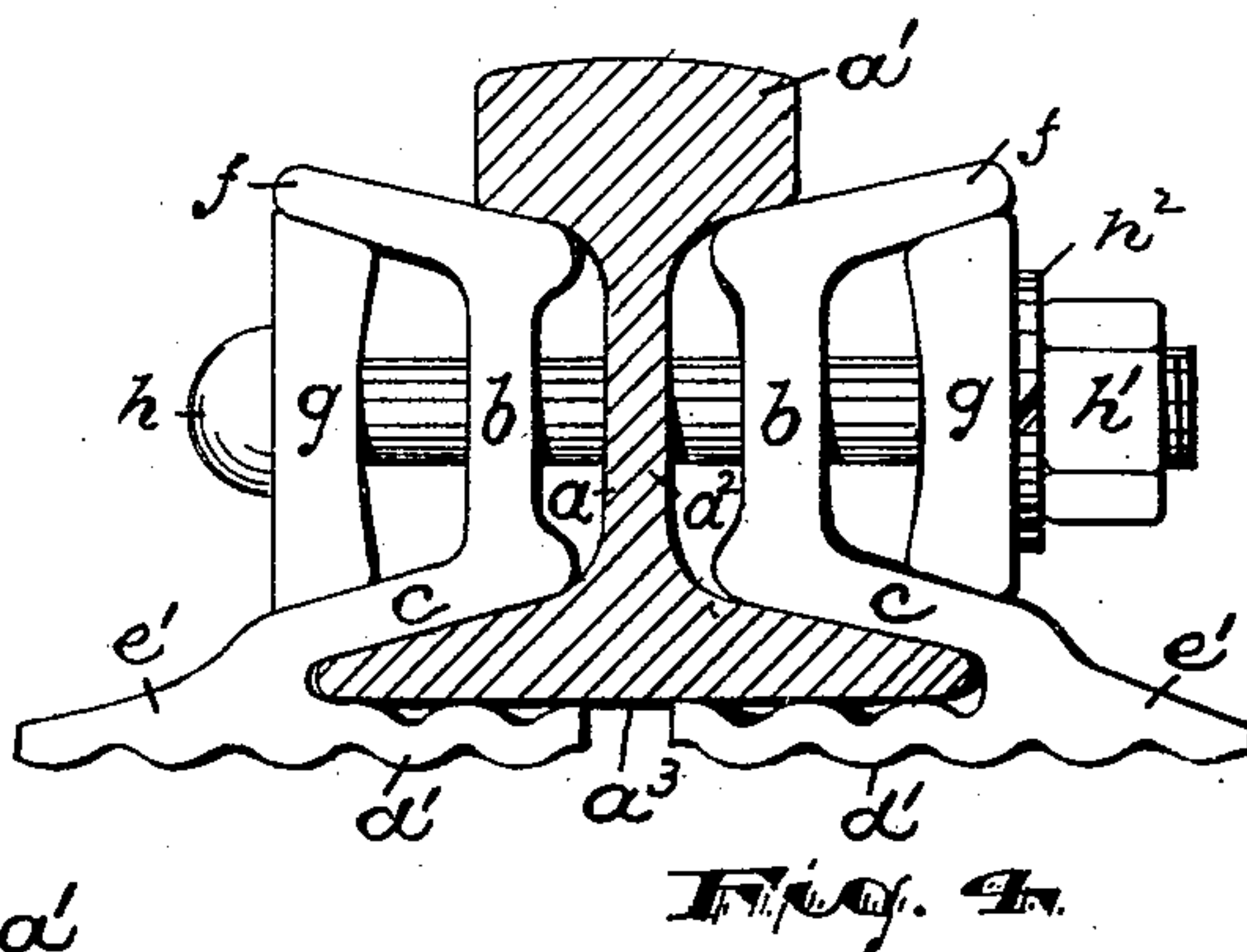
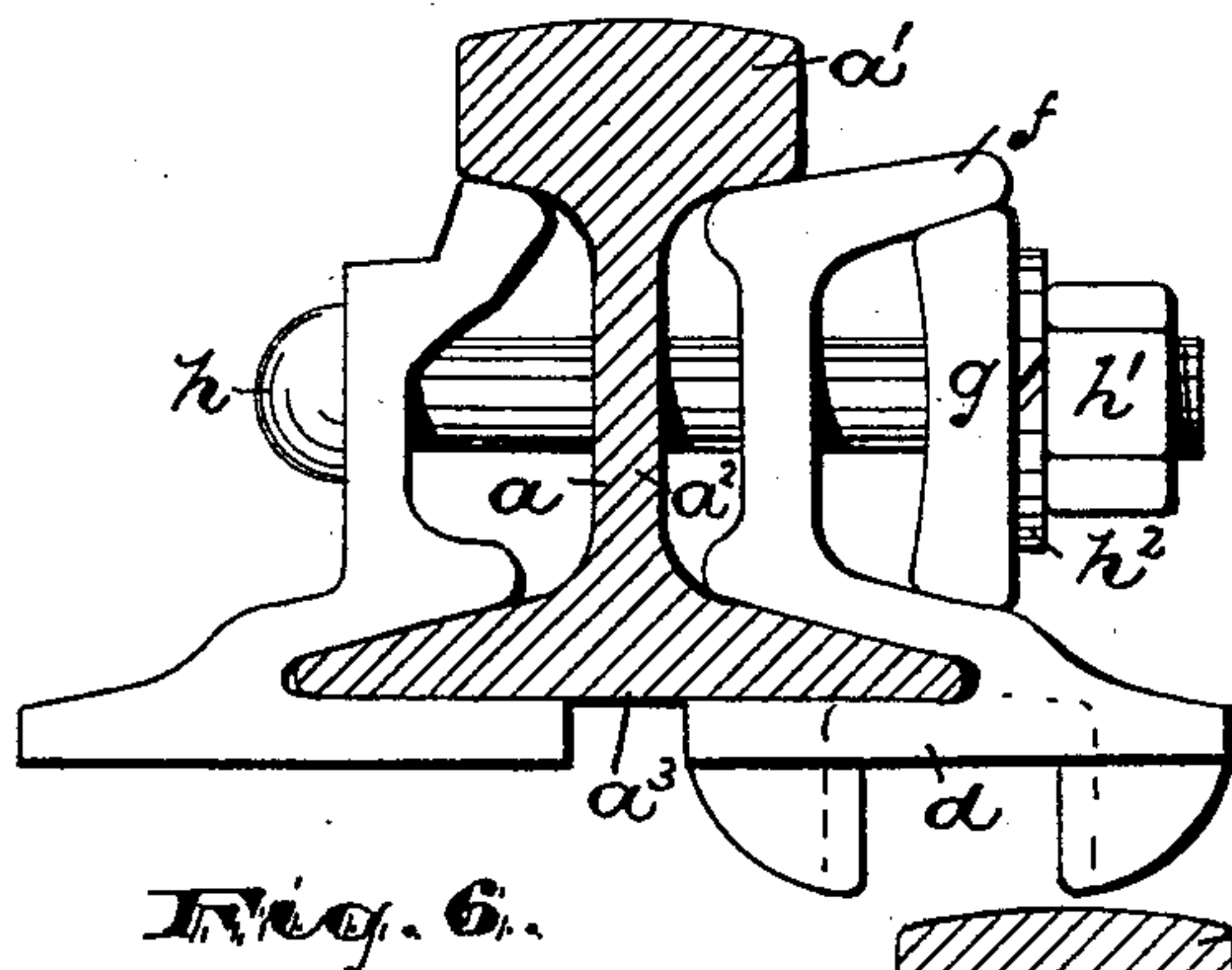
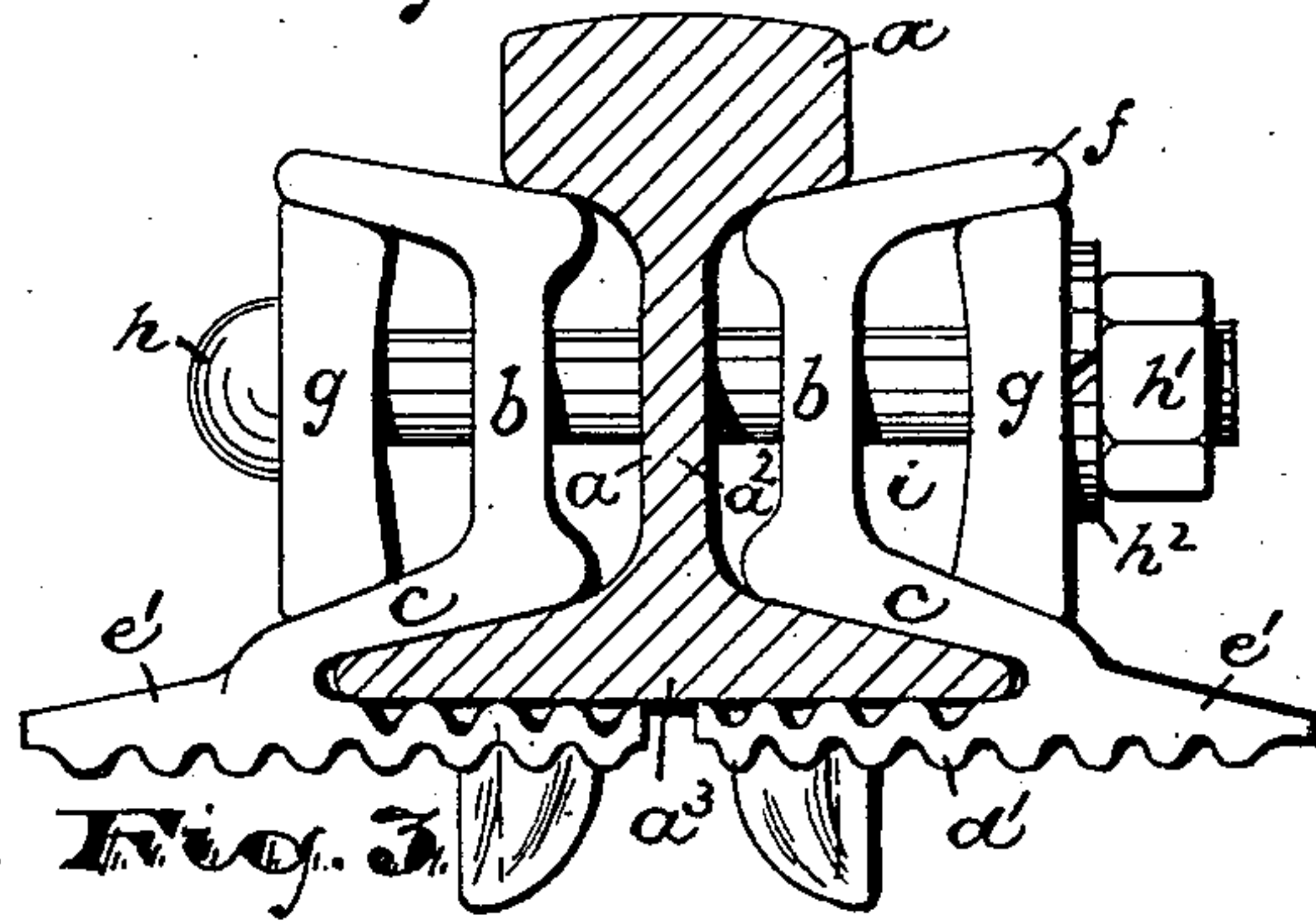
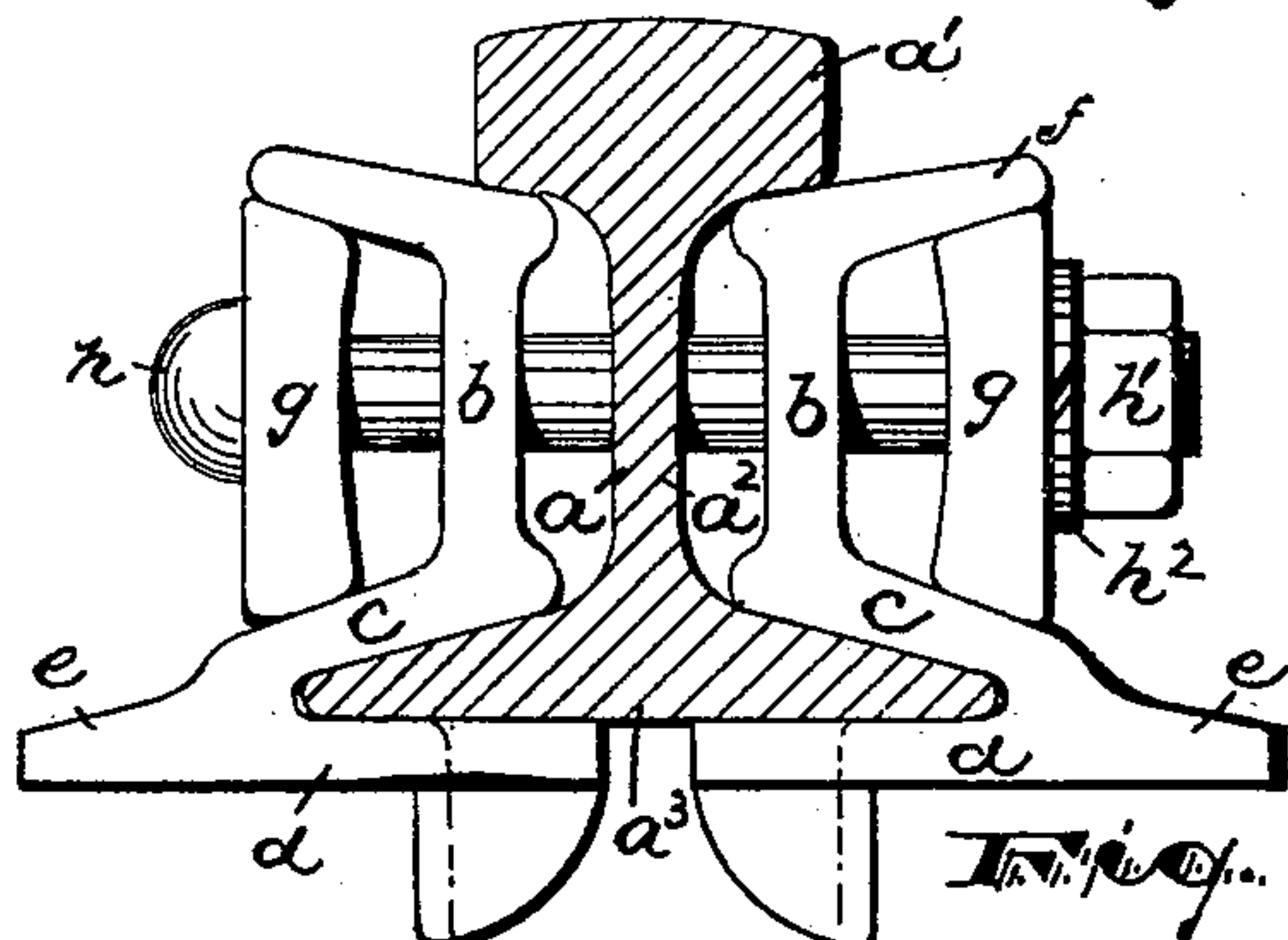
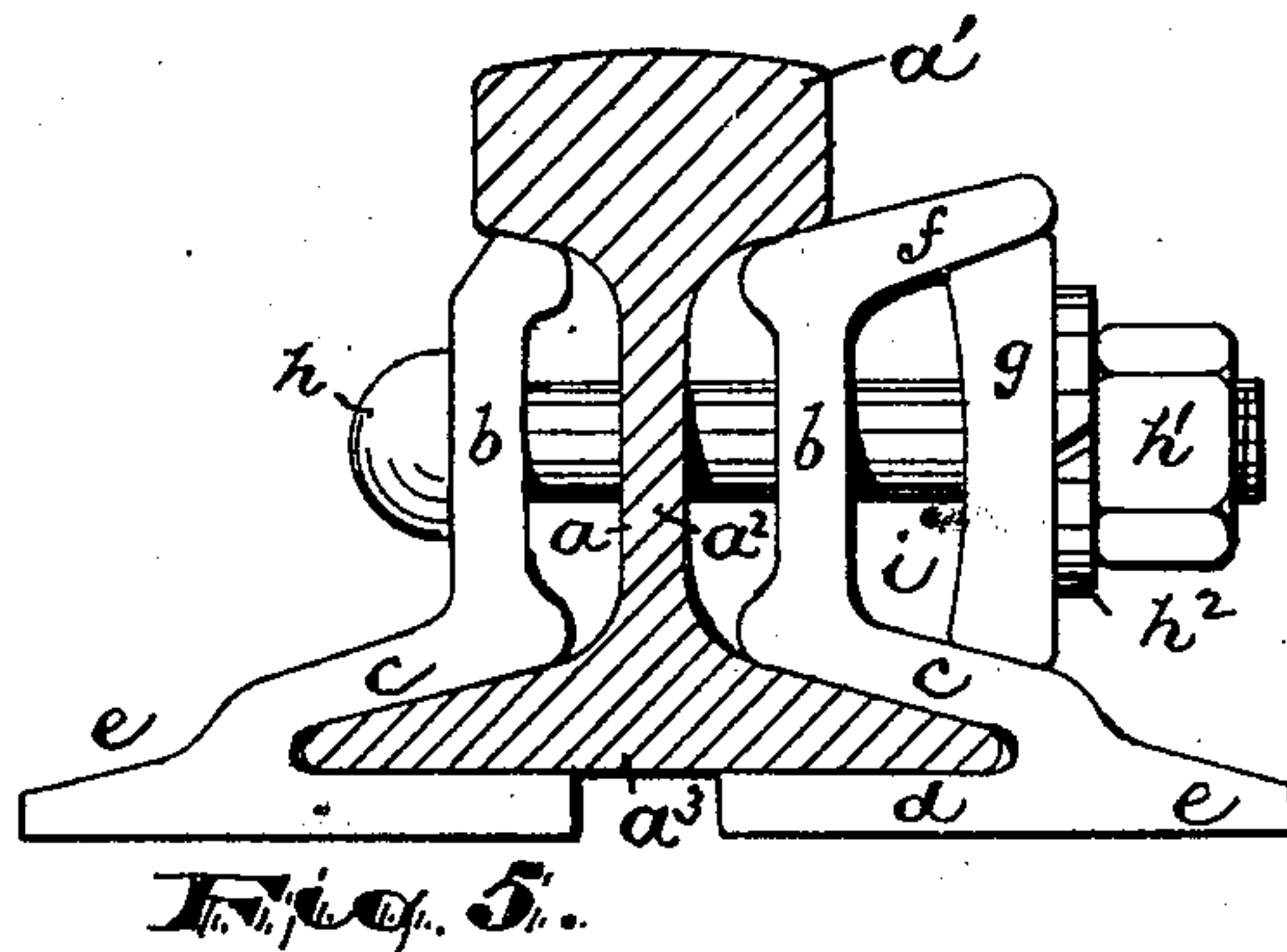
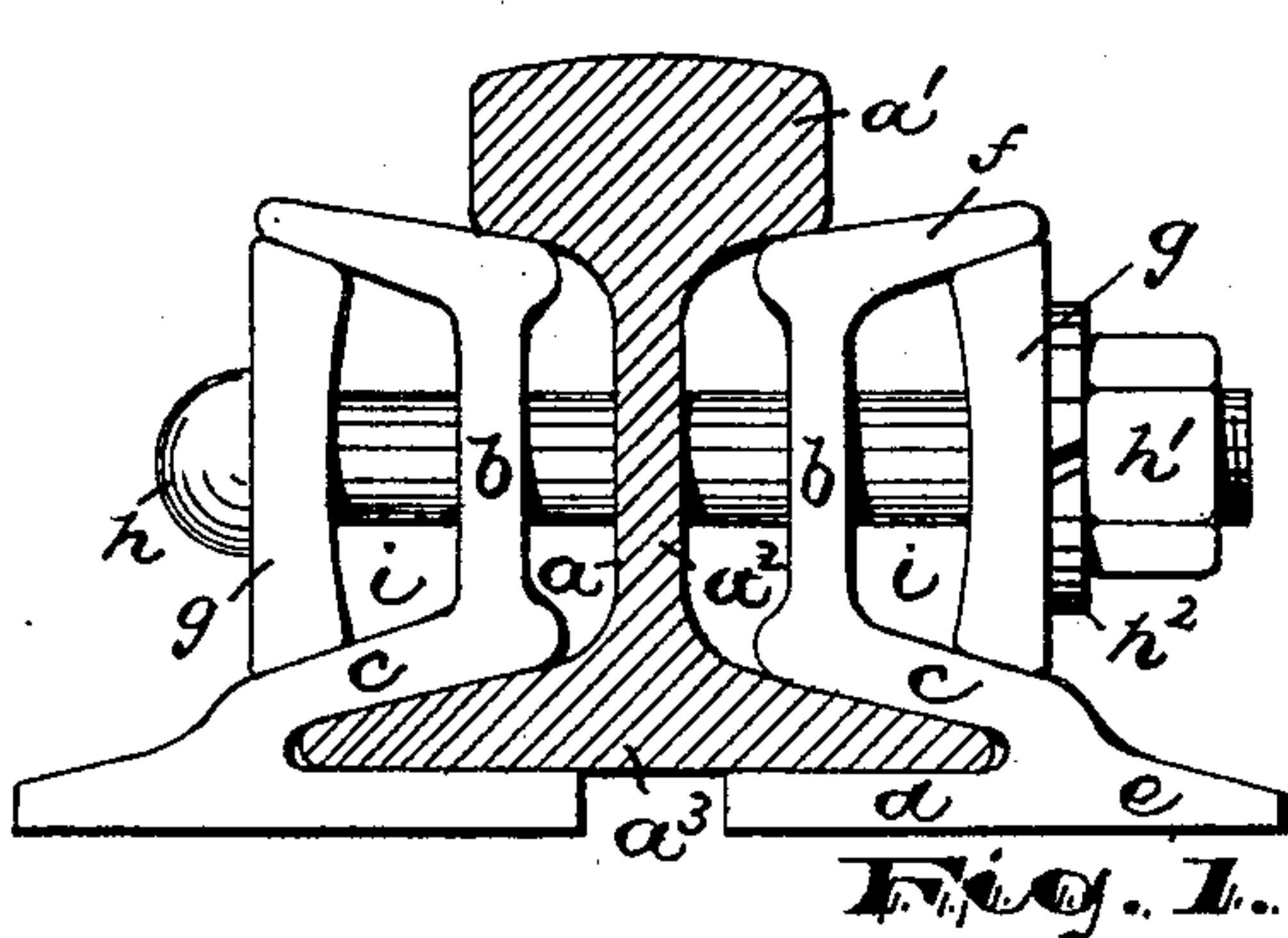
No. 680,197.

Patented Aug. 6, 1901.

R. B. CHARLTON.
RAILWAY RAIL JOINT.

(Application filed Apr. 5, 1901.)

(No Model.)



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RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 680,197, dated August 6, 1901.

Application filed April 5, 1901. Serial No. 54,466. (No model.)

To all whom it may concern:

Be it known that I, RICHARD B. CHARLTON, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Railway-Rail Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of fish-plates or rail connections represented in my prior patents, Nos. 667,499, 667,500, and 667,501, issued February 5, 1901; and the objects of the present invention are to enable different grades and thicknesses of material to be employed, whereby increased strength of the joint is secured, to obtain greater elasticity of parts, which shall permit of smoother riding over the joint and also serve the purpose of a nut-lock, to correct the tendency of the base member of the rail-joint to spring from a parallel position with respect to the rail-base under heavy strain, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved railway-rail joint or connection and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the claims.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 illustrates my invention in its simplest form, and Figs. 2, 3, and 4 show the same as applied to different styles of fish-plates. Fig. 5 shows my improved fish-plate as used on one side of the rail, with an ordinary fish-plate on the opposite side; and Figs. 6 and 7 show modifications of the construction shown in Fig. 5.

In said drawings, a indicates a railway-rail of any usual construction having a head a' , web a^2 , and base a^3 , and the fish-plates forming the subject of this invention are adapted

to be laid longitudinally against and overlapping the meeting ends of two rails at opposite sides thereof, as shown in the drawings. Said fish-plates are preferably rolled out of steel, and each has an upright member b , adapted at its upper edge to engage the under surface of the head of the rail and at its lower edge to rest upon the upper surface of the base of the rail. From the lower edge of said upright member b a lateral foot member c extends outward and obliquely downward and is turned inwardly under itself to form a base member d , lying beneath the foot member c and apart therefrom. From the line of junction of the foot member and base member a toe member e projects outward in the plane of the base member d , which plane is substantially at right angles to the upright member b , before described.

In applying the fish-plate to the rails it will be understood that the base a^3 of the rail is embraced between the foot member c and base member d , said base member resting at its lower surface upon the ties.

In my improved construction I form at the upper edge of the upright member b of the fish-plate an integral flange f , which extends obliquely upward and outward from the upright member, thus forming with the foot member d a channel-like space i , which in cross-section widens outwardly. Into this channel is adapted to be placed a reinforcing or spreading plate g , which is arranged in upright position, with its upper and lower edges engaging the inner surfaces of the flange f and foot member c . The bolt h , used in holding the fish-plates against the sides of the rail, extends transversely through said rail and fish-plates and also through the reinforcing-plates g , having a head lying outside of the reinforcing-plate at one side of the rail and at the other end being threaded to receive a nut h' outside the opposite reinforcing-plate. By screwing said nut upon the bolt, therefore, the two reinforcing-plates are forced inward into the channels i , thus not only pressing the fish-plates toward the rails from the opposite sides, but also simultaneously wedging their upper and lower contact-surfaces apart tightly against the head and foot of the rail, respectively. A washer h^2

is preferably arranged between the nut h' and the reinforcing member, as is shown.

By the construction thus described the parts of the joint or connecting plate can be made thinner and lighter, since the strain is divided between the upright member b and reinforcing-plate g . This not only facilitates manufacture, but also enables a material of a higher percentage of carbon to be used without rendering impossible a punching of the necessary holes. Furthermore, a greater elasticity and cushioning effect under the thrust of a passing train are obtained, thus securing a smoother riding over the joint. Again, under the weight of a passing train the reinforcing-plate g is forced downward to press its lower edge solidly upon the foot member c , thus preventing any tendency of said foot member to spring or bend from a parallel position relative to the under surface of the rail-base.

Obviously a fish-plate of my improved construction can be used at one side of the rail with a plate of any ordinary construction at the other side, as shown in Figs. 5, 6, and 7, or the particular feature of invention—viz., the top flange f and spreading-plate g —may be employed in rail-joint plates having base and toe members of any construction or con-

formation, as illustrated in Figs. 2, 3, and 4. Having thus described the invention, what I claim as new is—

1. A joint-plate for railway-rails, comprising an integral elongated plate having a vertical web, a foot member extending outwardly downward from the lower edge of said web, a base member turned under said foot member, an outwardly-extending top member, at the upper edge of said web, an interposed reinforcing-plate bearing against the inner surfaces of said top member and foot member at a distance from the vertical web, and means for clamping to the rails.

2. A rail-joint plate, comprising an upright web b , a foot member c , extending outwardly downward from said web, a base member turned inward from the outer edge of the foot member to lie beneath said foot member, a top member extending outward from the up-

per edge of the web b , and having an upwardly-inclined under surface forming with the foot member an outwardly - enlarging space i , and a reinforcing-plate adapted to lie in vertical position in said space i , and engage the upper and lower walls thereof.

3. In a rail-joint, the combination of an integral elongated plate having an upright web b , a foot member c , extending downwardly outward from the lower part of said web, and adapted to lie upon the base of a rail, a foot member d , bent inwardly under the foot member and adapted to lie against the bottom of a rail, a top member f , extending outwardly upward from the upper part of the web b , a reinforcing-plate g , placed edgewise between the foot and top members and engaging the same at its opposite edges while at a distance from the web b , and means for retaining said reinforcing-plate in place.

4. In a railway-rail joint, the combination with the meeting ends of two rails, of a fish-plate laid against the side of the rails and having an upright member adapted to engage at its upper and lower edges the head and base-flange of the rail, respectively, while remaining away from the web of the rail, a foot member extending downwardly outward from the lower edge of the upright member and being bent inward beneath itself to clasp the rail-base flange, a top member extending outward from the top edge of the upright member and presenting an upwardly-inclined under surface, a reinforcing-plate adapted to stand parallel to the upright member with its edges pressing oppositely against the top member and foot member at points out from their junction with the upright member, and bolts passed transversely through the rail, fish-plates and reinforcing-plate for clamping said parts together.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of March, 1901.

RICHARD B. CHARLTON.

Witnesses:

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HUGH P. KAYE, Jr.