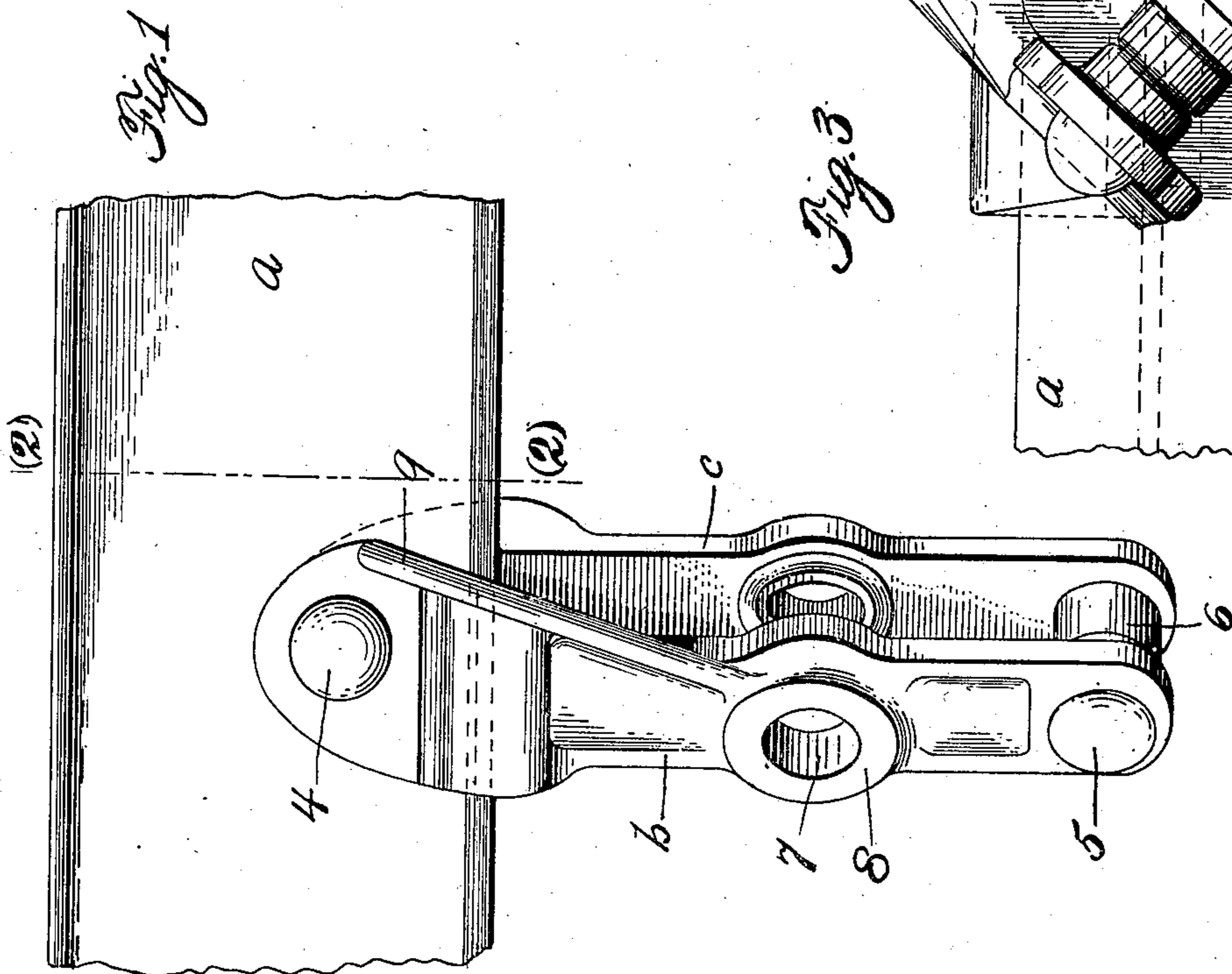
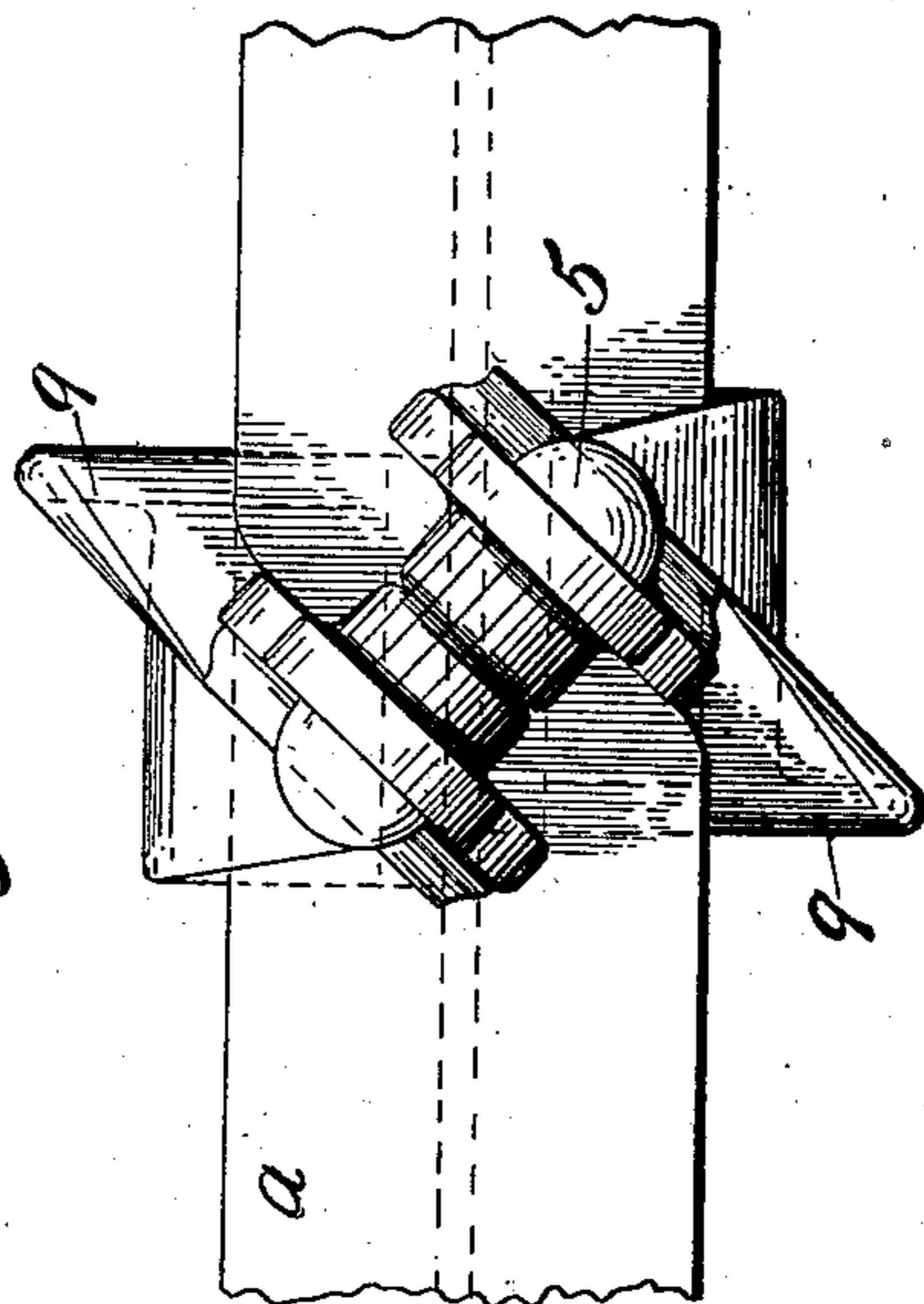
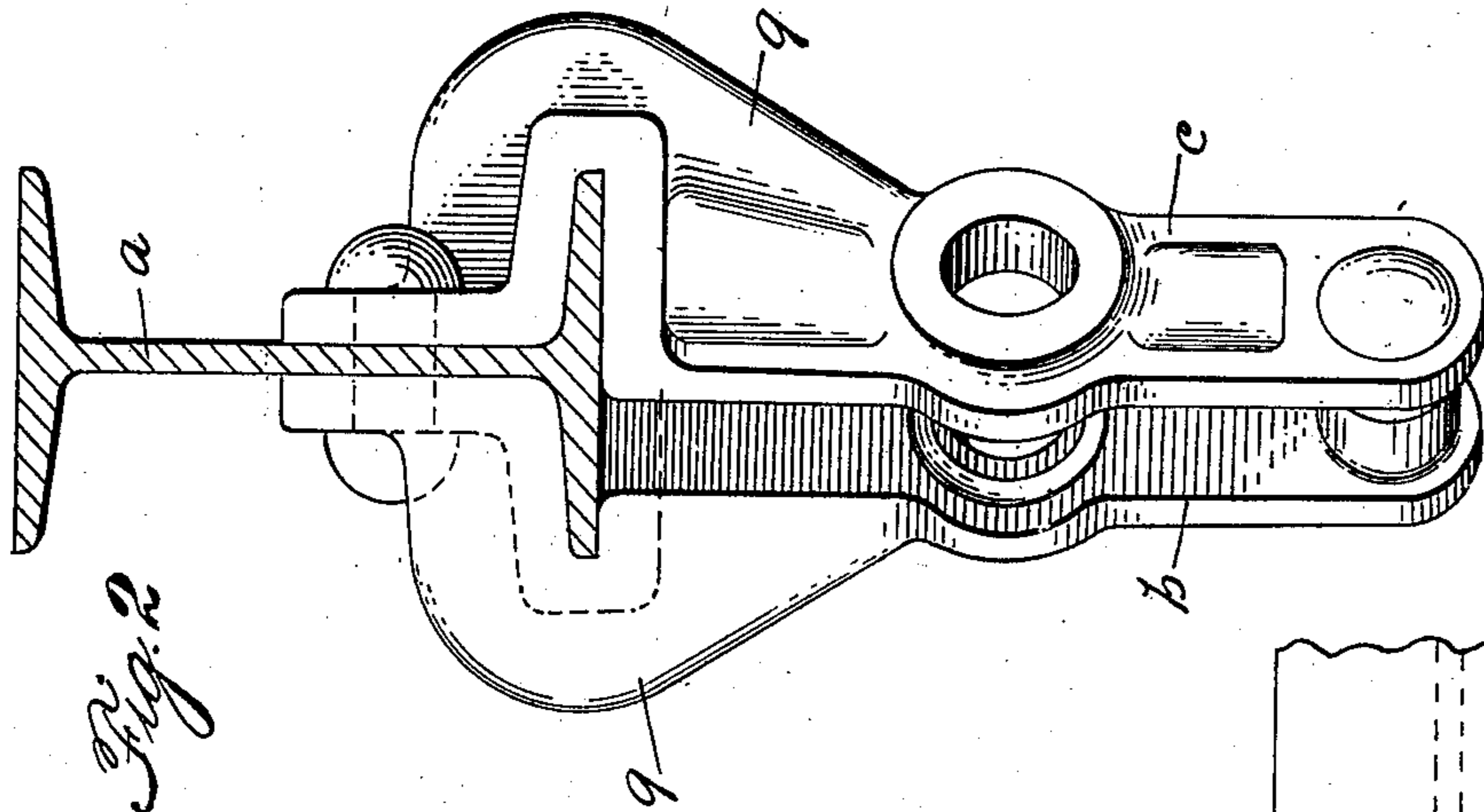


No. 828,370.

PATENTED AUG. 14, 1906.

C. E. BAUER.  
BRAKE BEAM FULCRUM.  
APPLICATION FILED APR. 20, 1906.



WITNESSES.

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## BRAKE-BEAM FULCRUM.

No. 828,370.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed April 20, 1906. Serial No. 312,756.

*To all whom it may concern:*

Be it known that I, CARL EDWARD BAUER, a citizen of the United States, residing at Hammond, in the State of Indiana, have invented certain new and useful Improvements in Brake-Beam Fulcrums, of which the following is a specification.

The invention relates to two-piece brake beam fulcrums, and has for its objects; to provide a cast fulcrum of this type which will be of maximum strength at the point which is usually the weak or critical one in cast fulcrums; to provide a fulcrum in which the metal is so proportioned that a comparatively light casting will have the same strength as a much heavier fulcrum of the old type; and finally to provide an effective durable fulcrum which can be produced at a low cost. The preferred form of my invention is shown in the accompanying drawing, in which—

Figure 1 is a side elevation showing the fulcrum in place upon the brake beam;

Figure 2 is a transverse section on the line (2) (2) of Figure 1, and

Figure 3 is a bottom view of the fulcrum.

Experience has indicated that in cast fulcrums the point of weakness is that at the encircling curve on the flange of the brake beam. There is a tendency to this weakness in all castings in which a sharp curve or a cone is produced, which is well recognized by foundrymen, and such weakness is especially noticeable in castings subject to severe strains, such as in articles of the cast fulcrum class. In order to overcome this weakness at the point of curvature cast fulcrums have been either made unnecessarily heavy, or else reinforced at the curve, but heretofore, in so far as I am aware, no construction has been directed to making the curved portion of greater strength and at the same time to preserving the lightness of the fulcrum. My invention is directed to this end, and is designed to produce a fulcrum of much greater strength than heretofore, and with much less material, and furthermore, to increase the lateral resistance of the fulcrum.

As shown in the drawing, *a* is the brake beam of the well known I-shape, in cross section, and *b* and *c* are the cast fulcrum pieces which may be either malleable iron or cast steel. The pieces *b* and *c* are substantially the same in shape, with the exception that

they are the reverse of each other in order to fit the opposite sides of the beam, and a description of one of these pieces will suffice for both. *b* and *c* are secured to the brake beam *a* by means of the through rivet 4, and are secured together at the bottom by the rivet 5 provided with the spacing piece 6 in the usual way. The pieces *b* and *c* are in the main flat, and the plane of the depending flat portion is at an angle to the beam *a*, as indicated clearly in Figures 1 and 2, as is customary in this class of fulcrums, in order that the brake lever may be at an angle to the brake beam *a*. The flat depending portions of the sides *b* and *c* are cored out to make them as light as possible, as indicated in the drawings. But in order to provide sufficient bearing surface for the pivot pin which is to pass through the hole 7, and also to give this part of the fulcrum the necessary rigidity a heavy annulus 8 is raised above the opening 7. Each of the parts *b* and *c* are flanged up at one edge to form the rib pieces 9, which turned-up edge or rib lies at an obtuse angle to the plane of the main flat depending part. These ribs 9 are highest at the point opposite the flange of the beam *a*, and extend downwardly in tapering form, until they join the annulus 8 about the opening 7. The upper end of the rib 9 verges into the vertical portion of the fulcrum through which the rivet 4 passes. The rib 9 is placed on that side of each of the fulcrum pieces *b* and *c* which least encircles the flange of the beam *a*, or in other words, on that side of the fulcrum pieces which is least deeply creased to fit the flange of the beam *a*. This last feature will be clear from an inspection of Figure 2 of the drawing. The advantage of my construction will be apparent. By providing the upturned portion 9, the beam encircling portion of the fulcrum is greatly strengthened and reinforced at its weakest point. Furthermore the body of the fulcrum piece is greatly stiffened laterally by such upturned edge or rib, and the metal in the rib is so arranged as to possess a maximum resistance against lateral strain. It will also be noted that by making the plane of the rib 9 at an obtuse angle to the flat portion of the depending part, instead of at right angles, a superior casting is secured, for the reason that no sharp cracks or joints are allowed, and the

danger of strain and breakage is reduced. By running the rib 9 down to the annulus 8, a support for such annulus is provided, and the support for the pivot pin is securely tied  
5 to the upper part of the casting and braced therefrom. By placing the edge 9 on the side of the fulcrum which is least curved to fit the flange of the brake-beam, it is possible to make a more direct connection between  
10 the annulus 8 and the top of the casting than would be the case if such rib 9 were placed on the other side of the fulcrum and had to take the extreme curve of such side. It will be observed that in this fulcrum the strain is in  
15 no case taken by metal placed flatwise, but that in every direction the casting is braced by an edgewise arrangement of metal.

Having thus described my invention and illustrated its use, what I claim as new, and  
20 desire to secure by Letters Patent, is the following:

1. A cast brake beam fulcrum for flanged beams, comprising two flat pieces oppositely placed with their depending portions at an  
25 angle to the web of the beam, and fitted to encircle the beam flange and bear against the web of the beam, and each provided opposite the beam edge and at the edge of the fulcrum which least encircles such beam flange with a  
30 tapering edge turned at an obtuse angle to the flat portion of the fulcrum.

2. A brake beam fulcrum for flanged beams, comprising two flat pieces oppositely placed with their depending portions at an angle to the web of the beam, and fitted to  
35 encircle the beam flange and bear against the web of the beam, and each provided opposite the beam edge and at the edge of the fulcrum which least encircles such beam flange with a  
40 turned up edge at an obtuse angle to the flat portion of the fulcrum, which edge portion is highest at the point of curvature and tapered down to the center of the depending portion of the fulcrum.

3. A cast brake beam fulcrum for flanged  
45 beams comprising two flat pieces oppositely placed with their depending portions at an angle to the web of the beam and fitted to encircle the beam flange and bear against the  
50 web of the beam and each having a stiffening annulus for the pivot hole, and each provided with a tapering edge turned at an angle to the flat portion of the fulcrum and engaging at the lower end the said annulus.

In testimony whereof I have hereunto  
55 signed my name in the presence of the two subscribed witnesses.

CARL EDWARD BAUER.

Witnesses:

PAUL CARPENTER,  
JAMES NICHOLAS LORENZ.