

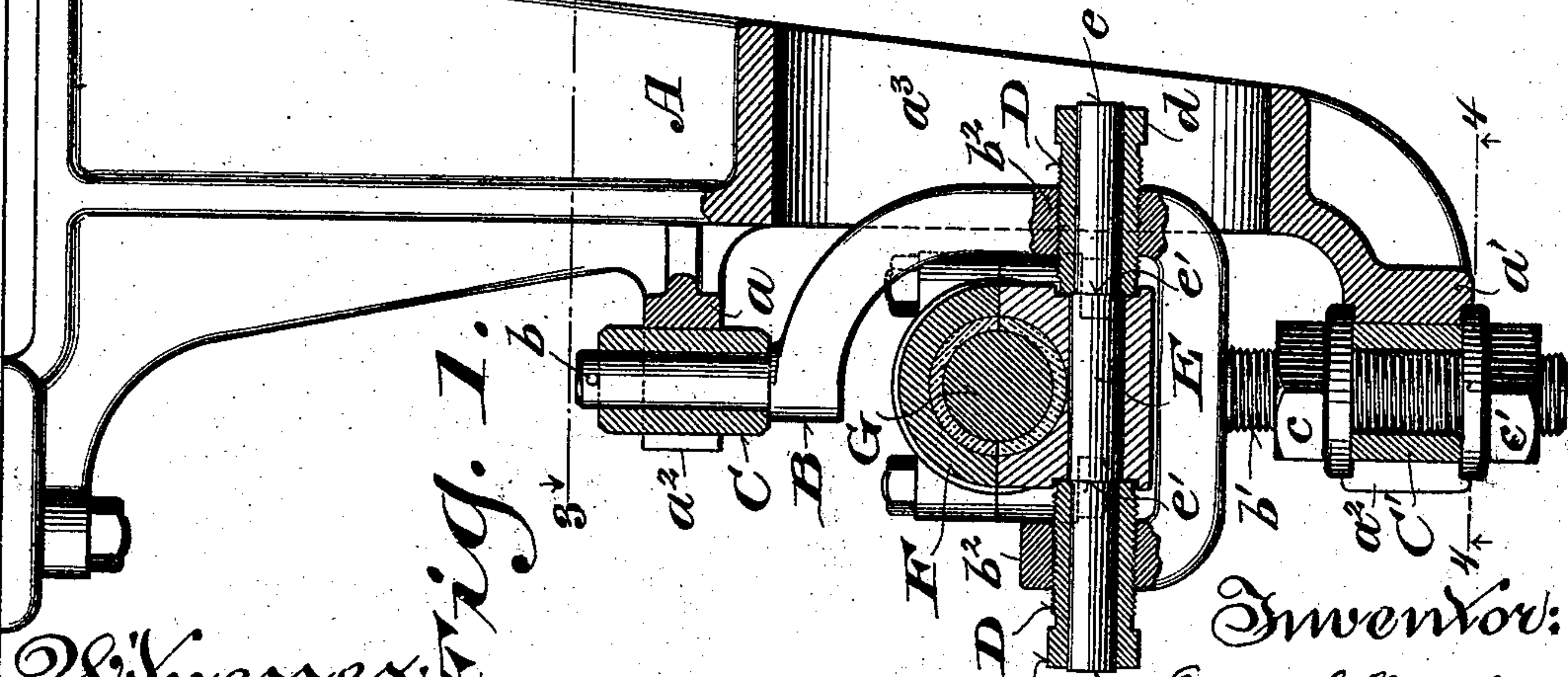
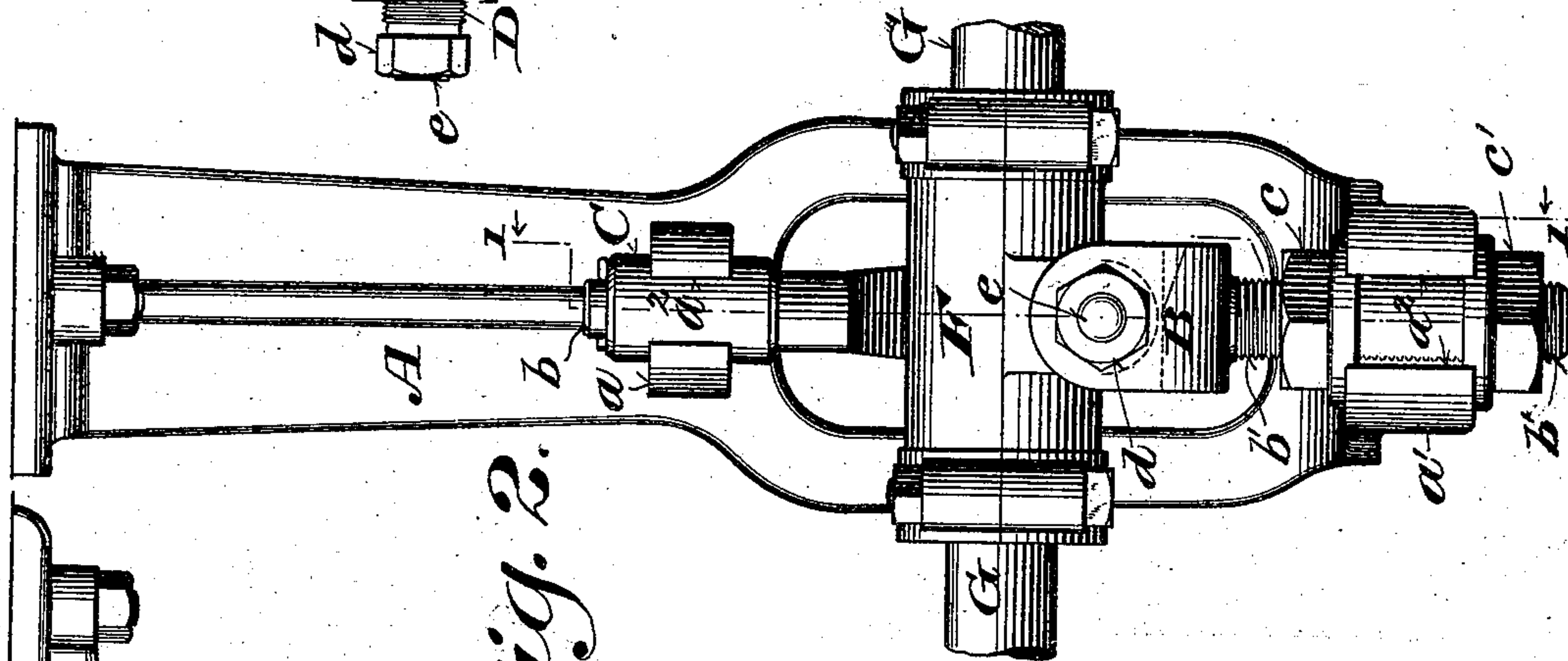
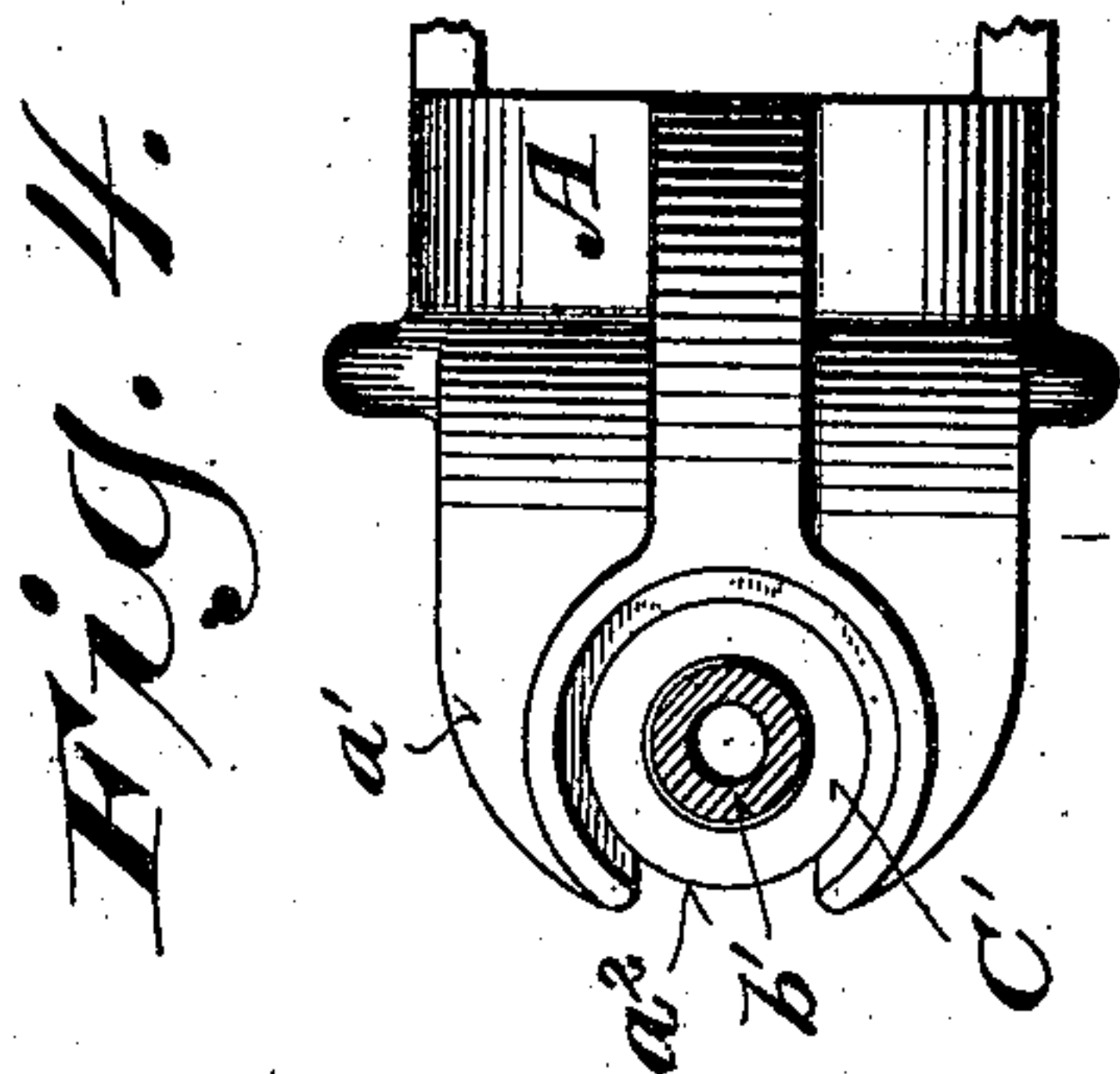
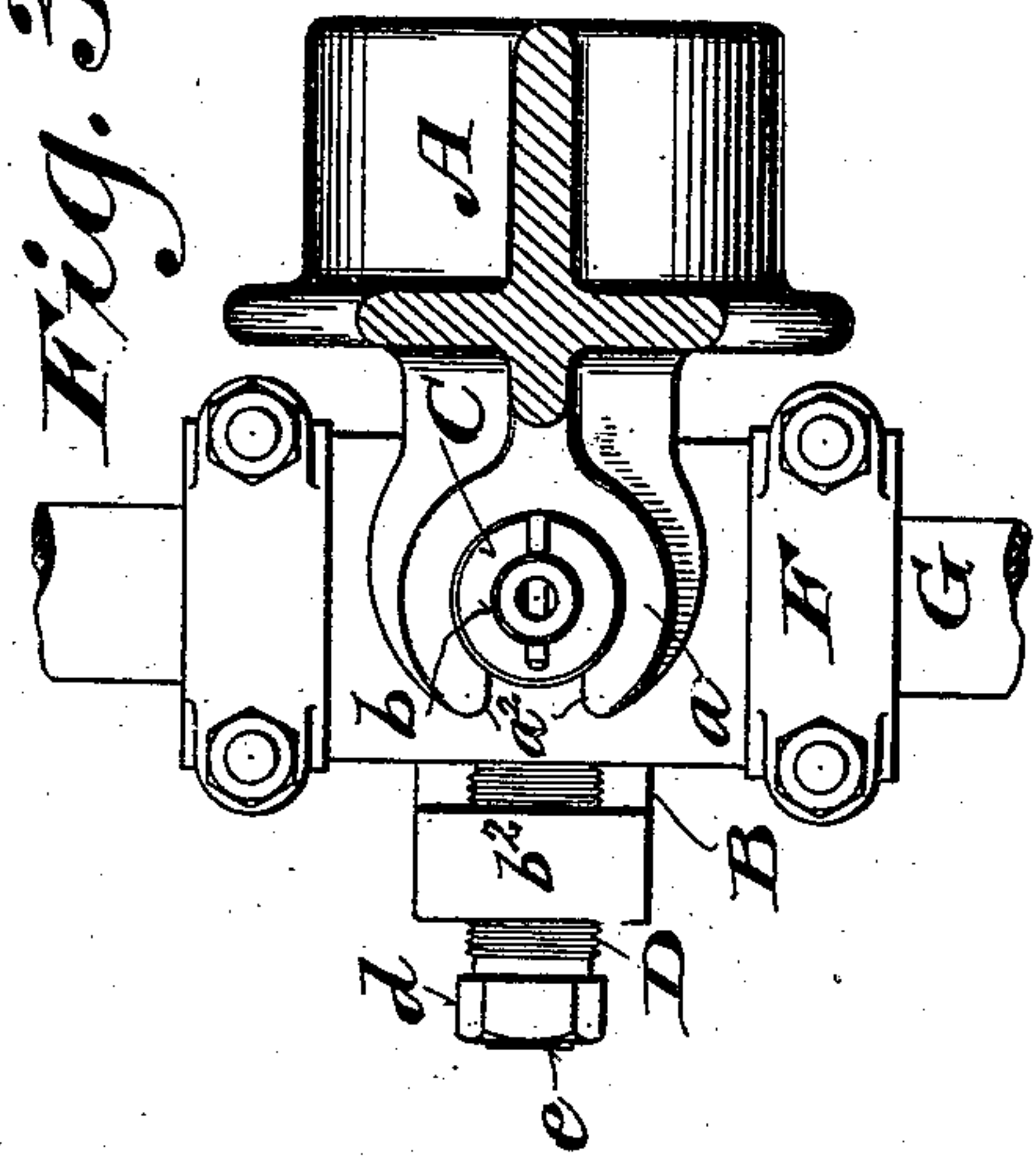
(No Model.)

2 Sheets—Sheet 1.

E. J. MULLER.
UNIVERSAL BEARING.

No. 548,809.

Patented Oct. 29, 1895.



Inventor:

Ernest J. Muller,

By *Wm. H. Anderson* Attorney

Chas. L. Goess

Witnesses:
Geo. W. Young.
Chas. L. Goess.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 8.

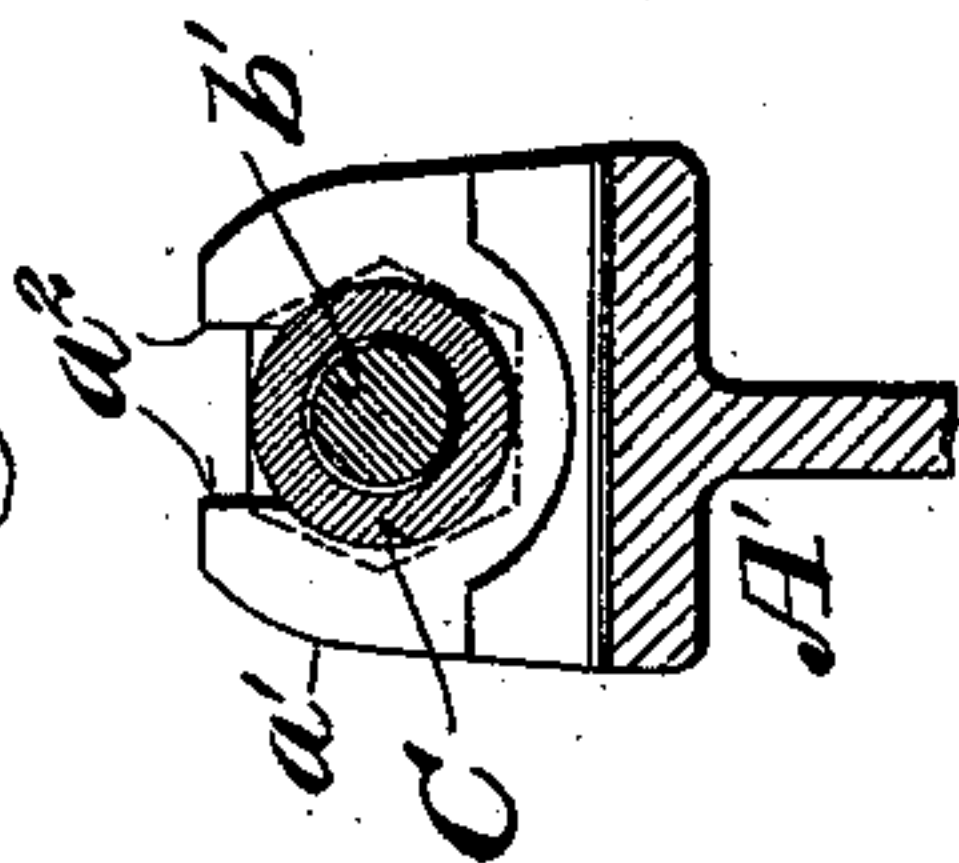


Fig. 7.

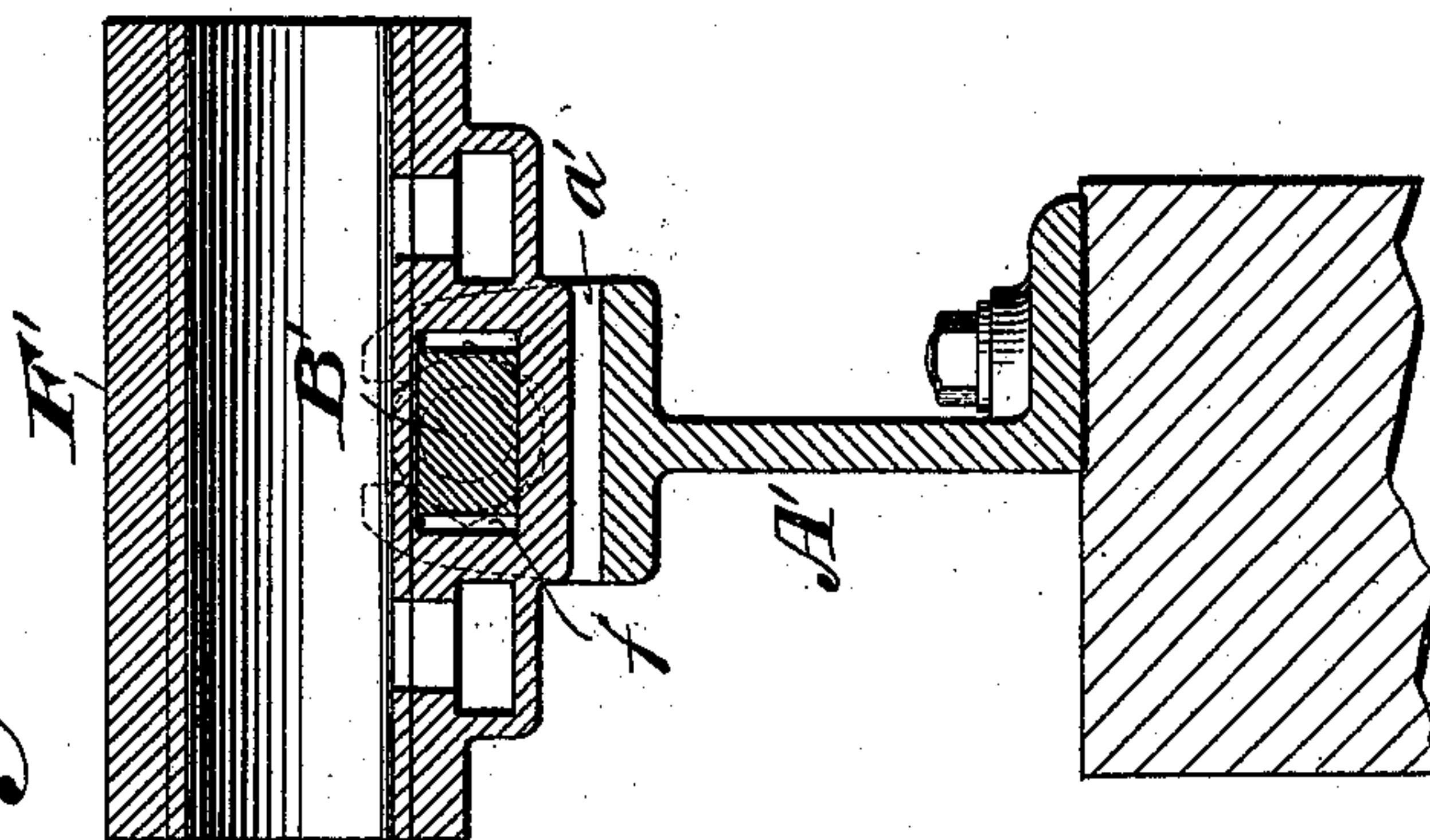


Fig. 5.

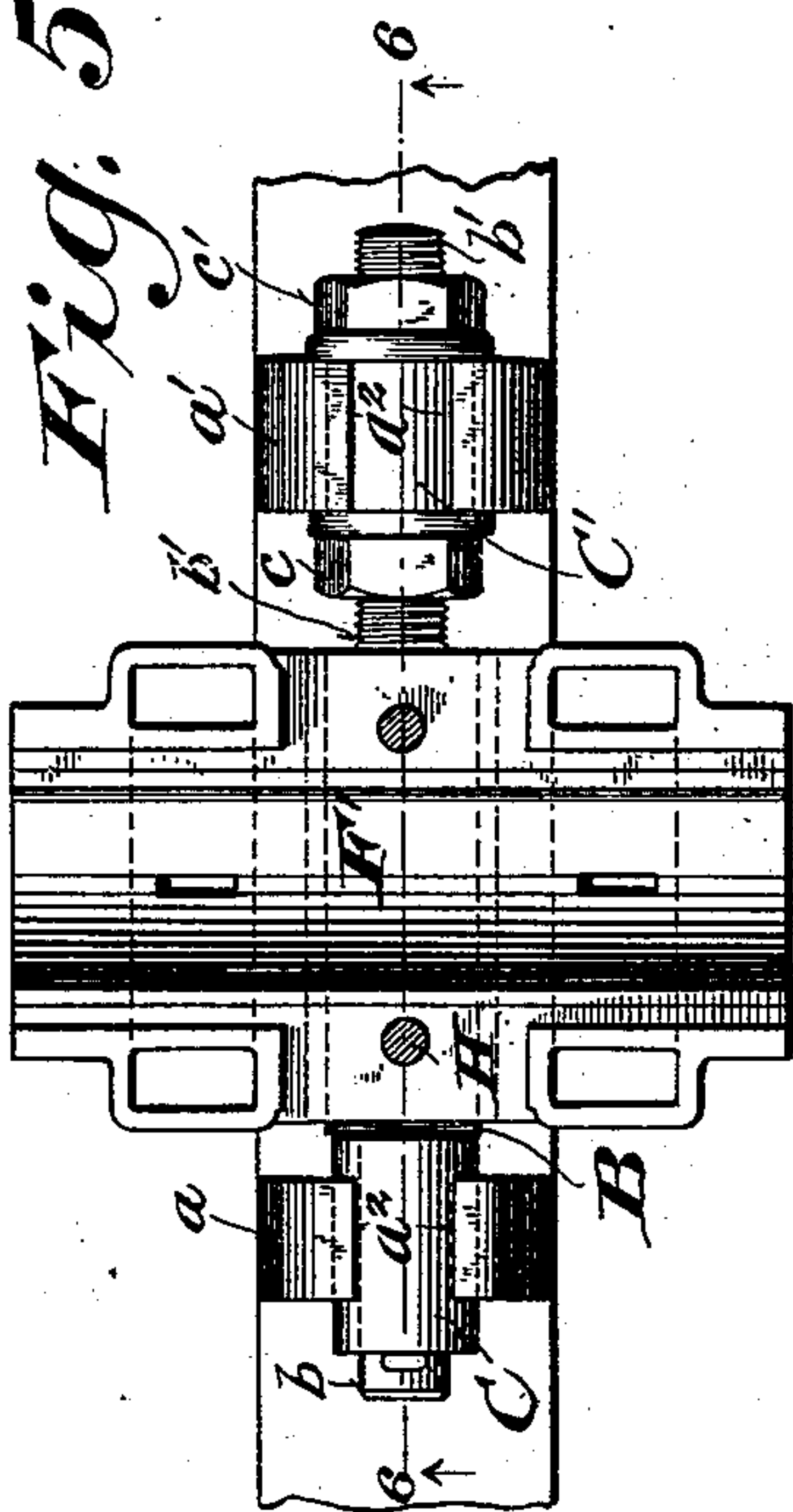
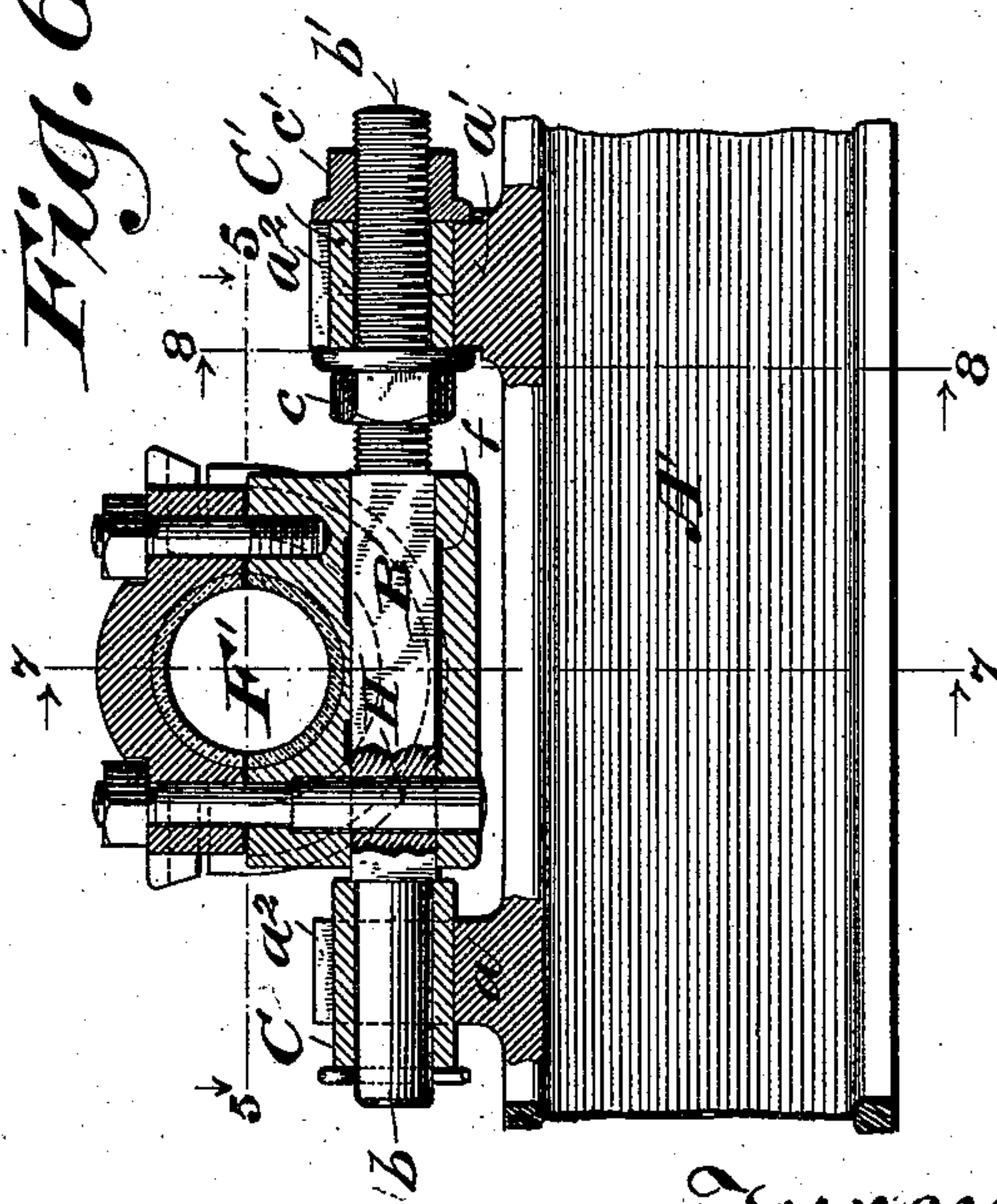


Fig. 6.



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UNITED STATES PATENT OFFICE.

ERNST J. MULLER, OF BUTTE, MONTANA.

UNIVERSAL BEARING.

SPECIFICATION forming part of Letters Patent No. 548,809, dated October 29, 1895.

Application filed January 21, 1895. Serial No. 535,664. (No model.)

To all whom it may concern:

Be it known that I, ERNST J. MULLER, of Butte, in the county of Silver Bow and State of Montana, have invented certain new and useful Improvements in Universal Bearings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains 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.

The main object of my invention is to facilitate the alignment of a number of boxes and the taking down and putting up of shafting supported thereby without disturbing the adjustment of the boxes or moving the permanent box-supports and to prevent binding.

It consists of certain novel features in the construction and arrangement of the component parts of the device, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a view, partly in side elevation and partly in vertical section in a plane indicated by the line 1 1, Fig. 2, cutting the axis of the box transversely, of a hanger embodying my improvements. Fig. 2 is a front elevation of the same. Fig. 3 is a horizontal section on the line 3 3; Fig. 4, a horizontal section on the line 4 4, Fig. 1; and Figs. 5 to 8, inclusive, are views of another form of bearing embodying my invention, Fig. 5 being a plan view and horizontal section on the line 5 5, Fig. 6; Fig. 6, a vertical section on the line 6 6, Fig. 5, cutting the axis of the bearing transversely; Fig. 7, a vertical section on the line 7 7, Fig. 6, cutting the axis of the bearing lengthwise; and Fig. 8, a vertical section on the line 8 8, Fig. 6.

Referring to Figs. 1 to 4, inclusive, A designates a depending bracket or hanger attached in the usual manner to a ceiling or other convenient overhead support. It is formed or provided on the front side with hubs a a' , having cylindrical bores or holes in line with each other and longitudinal openings a^2 a^2 in the front side of less width than the diameter of said holes. The hanger is also formed between said hubs with an opening a^3 to receive the rear side of the yoke and

to afford access to the rear adjusting-screw of the horizontal pivot-bearing, as hereinafter explained.

B is a yoke formed or provided with a plain cylindrical stem b and a screw-threaded stem b' in line therewith. It is also formed in a line perpendicular to the axial line of said stems with hubs b^2 b^2 , having screw-threaded holes in line with each other.

C and C' are sleeves loosely fitted over the stems b and b' , respectively, and in the bores of the hubs a and a' , in which they are adapted to turn. c and c' are nuts threaded on the stem b' and adapted to be turned thereon against the ends of the sleeve C', which is made slightly longer than the hole in the hub a' , so that when said nuts are jammed against the ends of said sleeve they will not bind against the adjacent faces of said hub.

D D are hollow externally-threaded screws fitted in the screw-threaded holes in yoke B and formed with angular ends d d , by means of which they are turned and adjusted therein.

E is a pivot-pin having reduced ends or stems e e , which are fitted to turn in the hollow screws D D, and shoulders e' e' , against which the inner ends of said screws are adapted to abut.

F is a box, the lower half or section of which has a transverse bore fitted to turn upon the unreduced part of said pivot-pin E between its shoulders e' e' , the length of said bore being slightly less than the length of the unreduced portion of said pin, so that when said screws are jammed against the shoulders e' e' they will not bind against the adjacent faces of the box.

The stems b and b' are made of such diameter that they can be inserted sidewise into the bores of hubs a and a' through the lateral openings a^2 a^2 therein, and they are held centrally in said hubs by the sleeves C and C', which are inserted one over the stem b from above and the other over the stem b' from below. These stems with said sleeves being free to turn in said hubs, and the stems e e of the pivot-pin E being free to turn in the hollow screws D D, constitute vertical and horizontal pivot connections of the box and permit it to turn in all directions sufficiently to adapt itself to any irregularity or deflection from a straight line of the shaft, which it sup-

ports without binding thereon. It will be observed that there are two vertical as well as horizontal pivot connections located on opposite sides of the box, which is thus firmly held in place.

The box is adjusted horizontally by loosening one of the hollow screws D and turning it out, while the other screw D is turned in. It is adjusted vertically by turning the nuts c and c' on the threaded stem b', so as to raise or lower the yoke B, the stem b, with its sleeve C, being free to move endwise through hub a. The angular end of the rear screw D is accessible through the opening a³ in the hanger. The box may be readily removed with the shaft G, which it supports, from the hanger A without disturbing the adjustments of the bearing by simply removing the lower nut c' and the sleeves C and C', which permit the stems b and b' to be withdrawn sidewise through the lateral openings in hubs a and a'.

The foregoing construction affords in a universal bearing easy means of adjustment in all directions and of taking down the shaft carried by the bearing without disturbing its adjustments and without disturbing the fastenings of the hanger or permanent support.

In some cases the hub a of the bracket or hanger A, the stem b of the yoke B, and the sleeve C may be dispensed with, but for strength and stability I prefer the construction shown.

Referring now to Figs. 5 to 8, inclusive, illustrating a form of bearing embodying certain parts of my improvements specially adapted for saw-arbors and similar uses, A' designates a part of a saw-frame or other suitable support provided with two hubs a and a', bored in line with each other and having lateral longitudinal openings a², like those hereinbefore described, of less width than the diameter of the cylindrical holes in said hubs.

B' is a squared pivot-bar formed at the ends with a plain cylindrical stem b and a screw-threaded stem b', capable of being inserted sidewise into said hubs through the lateral openings a² therein.

C and C' are sleeves like or similar to those hereinbefore described, loosely fitted on said stems and into the bores of said hubs, so as to turn freely therein. Two jam-nuts c and c', placed on the threaded stem b' on opposite sides of the hub a', serve to adjust the bar B' lengthwise and to hold it when adjusted in place.

F' is a journal-box, the lower half or section of which is formed with a squared opening f, in which the squared portion of the pivot-bar B' is closely fitted vertically, but allowed play on the sides. Said box is pivotally connected with said bar by a vertical pin or bolt H, which may serve, also, for securing the cap to the lower part or section of the box on one side, as shown in Fig. 6. In this form of bearing the box is adjustable in a horizontal direction only, but is universally movable or free to turn in several directions. It can be removed

with the shaft which it carries without disturbing its horizontal adjustment by turning off the nut c' from stem b' and withdrawing the sleeves C and C' from hubs a and a', when the stems b and b' can be lifted sidewise through the openings a² in said hubs. It will be observed that the horizontal pivot connections of this form of the bearing are essentially like the vertical pivot connections of the form of bearing shown in Figs. 1 to 4, inclusive and that the pivot-bar B' serves substantially the same purpose as the yoke B, which constitutes an oscillatory box-supporting member, to which the box is pivoted transversely to the axis on which said member oscillates.

I claim—

1. In an adjustable bearing the combination with a yoke having two threaded holes in line with each other, and a box having a plain cylindrical hole transverse to its axis, of hollow externally threaded screws fitted in the screw-threaded holes of said yoke, and a pivot pin having reduced portions fitted to turn in said screws, and an intermediate unreduced portion fitted to turn in the transverse hole through said box, substantially as and for the purposes set forth.

2. In a universal bearing the combination with the box, of a screw-threaded box-supporting stem, a support having a cylindrical bore, a sleeve fitted to turn in said bore and to pass loosely around said stem, and nuts threaded upon said stem and adapted to abut against opposite ends of said sleeve, which is slightly longer than the bore in which it is fitted, substantially as and for the purposes set forth.

3. In a universal bearing the combination with a box, of a support having two separated bores in line with each other, box supporting pivot stems one of which is threaded, sleeves loosely fitted upon said stems and in the bores of said support, and nuts fitted to engage said threaded stem and to abut against opposite ends of the sleeve thereon, which is slightly longer than the bore of the support in which it is fitted and adapted to turn, substantially as and for the purposes set forth.

4. In a universal adjustable bearing the combination of a support provided with two separated bores arranged in line with each other and having in one side longitudinal openings of less width than the diameter of said bores, a box supporting member having in line with each other pivot stems adapted to be inserted sidewise into said bores through the lateral openings therein, sleeves fitted on said stems and adapted to fill the bores in said support around them and to hold them centrally therein, means of adjusting said stems lengthwise in said support and a box pivoted to said supporting member transversely to its stems, substantially as and for the purposes set forth.

5. In a universal adjustable bearing, the combination with a suitable support having

separated hubs bored in line with each other, of a yoke having pivot stems in line with each other, one of which is threaded, and in a line perpendicular thereto two separated
5 internally threaded holes, sleeves loosely fitted in said hubs and upon said stems, the threaded stem being provided with two nuts adapted to engage opposite ends of the sleeve thereon without binding against the part in
10 which it turns, externally threaded hollow screws fitted in the threaded holes of said yoke, a pivot pin having stems fitted to turn in said hollow screws, the inner ends of which engage shoulders on said pin, and a box
15 mounted and adapted to turn upon said pin, substantially as and for the purposes set forth.

6. In an adjustable bearing, the combination with a suitable support, of a yoke having two separated screw-threaded holes in
20 line with each other and pivoted in a line perpendicular thereto to said support, two hollow screws threaded to fit said holes, a pivot pin having reduced stems fitted to turn in said screws and shoulders against which
25 the inner ends of said screws are adapted to abut, and a box mounted and adapted to turn on said pivot pin between its shoulders, substantially as and for the purposes set forth.

30 7. In an adjustable bearing, the combination with a suitable support provided with

two separated cylindrical bores in line with each other and having longitudinal openings in one side of less width than the diameter of the bores, of a yoke having two separated threaded holes, and in a line perpendicular thereto two stems adapted to be entered into said bores sidewise through their lateral openings, one of said stems being screw-threaded and the other plain, sleeves
35 loosely fitted in said bores and upon said stems so as to hold them centrally therein, two nuts placed on said threaded stem and adapted to engage opposite ends of the sleeve thereon, hollow screws threaded in the holes
40 in said yoke, a pivot pin formed with reduced stems adapted to turn in said screws and with shoulders against which the inner ends of said screws are adapted to abut, and a box having a transverse bore fitted to turn
45 on said pin between its shoulders and of slightly less length than the distance between said shoulders, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as
55 my own I affix my signature in presence of two witnesses.

ERNST J. MULLER.

Witnesses:

J. R. GRICE,
D. H. MEANY.