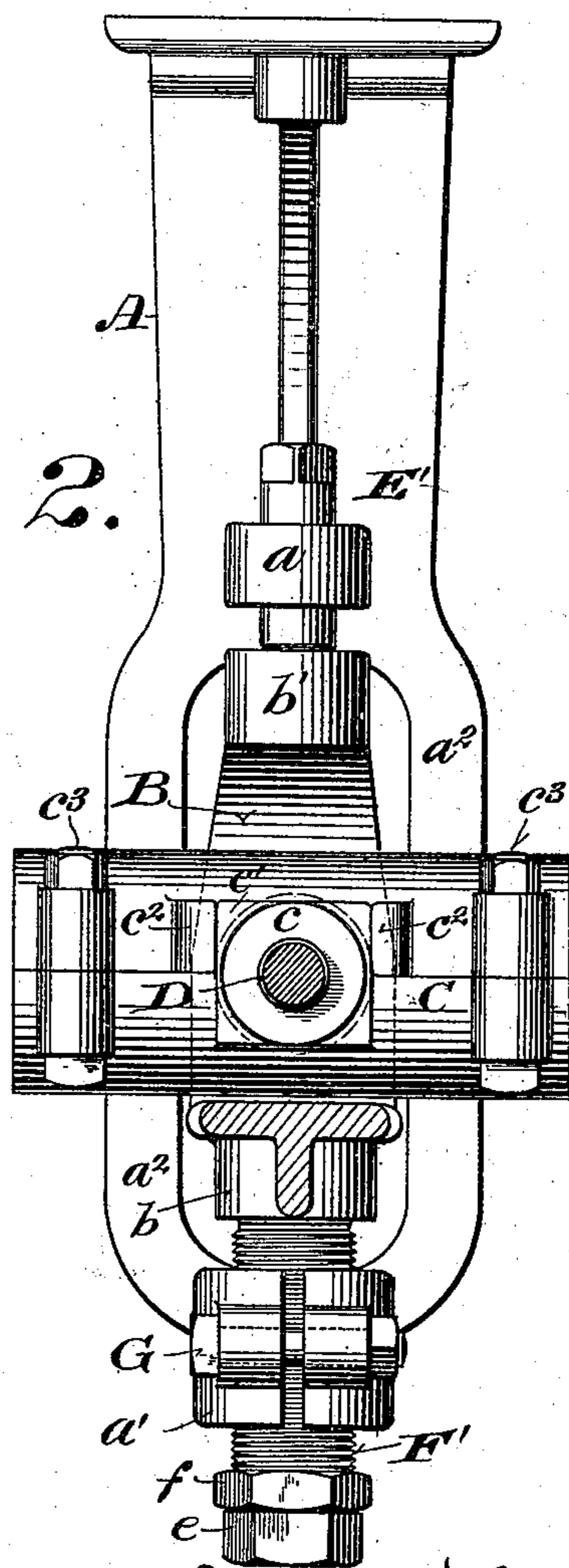
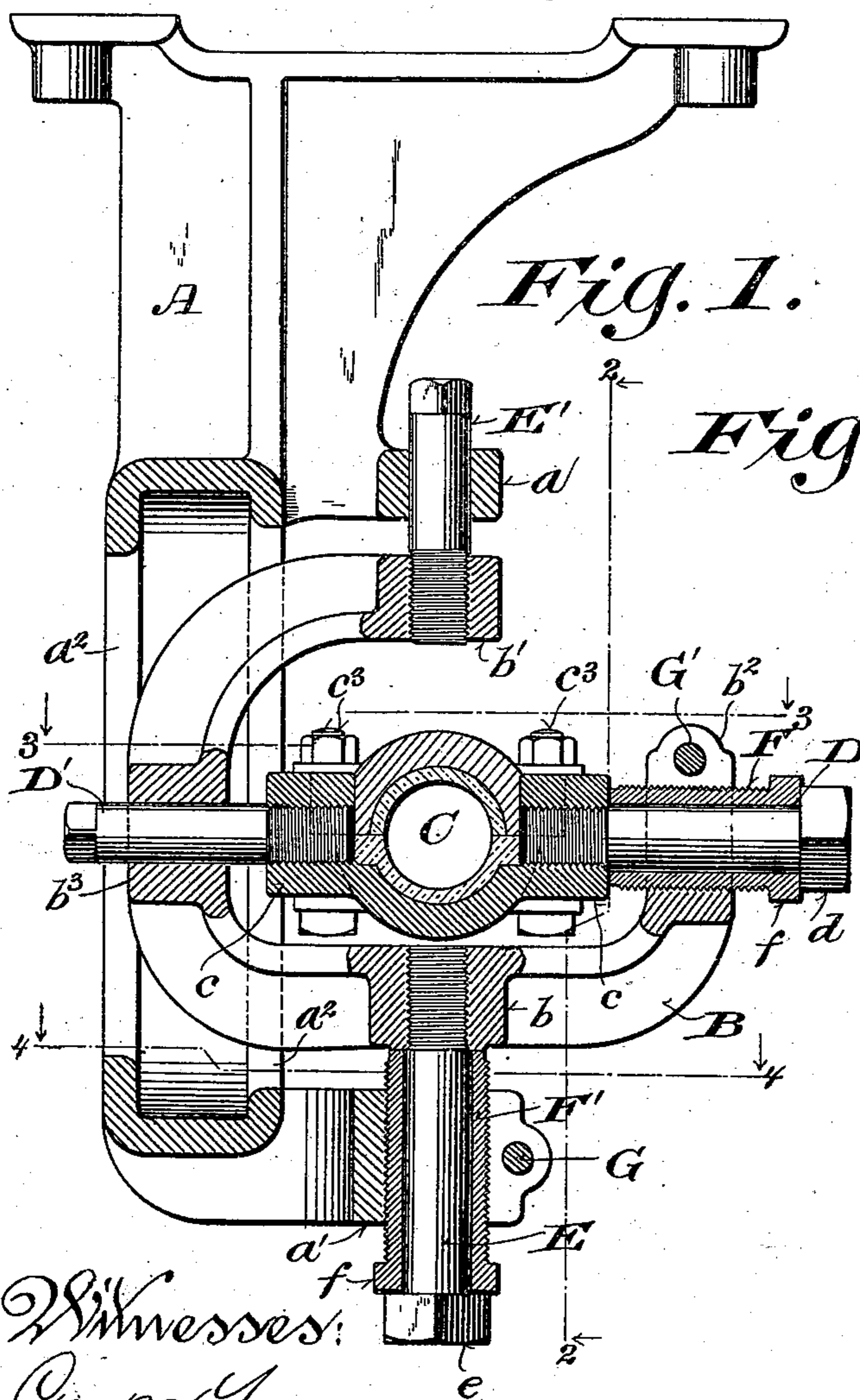
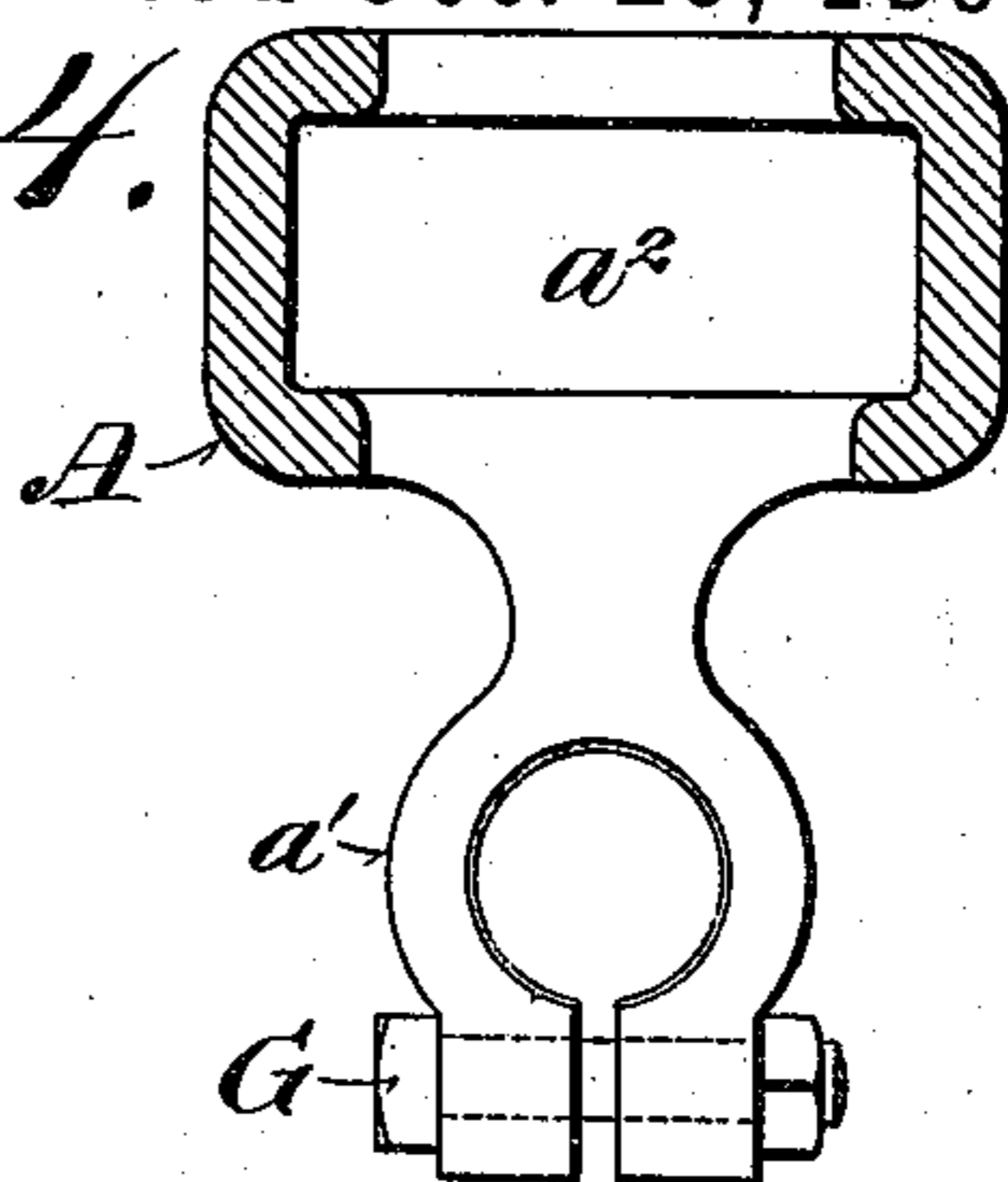
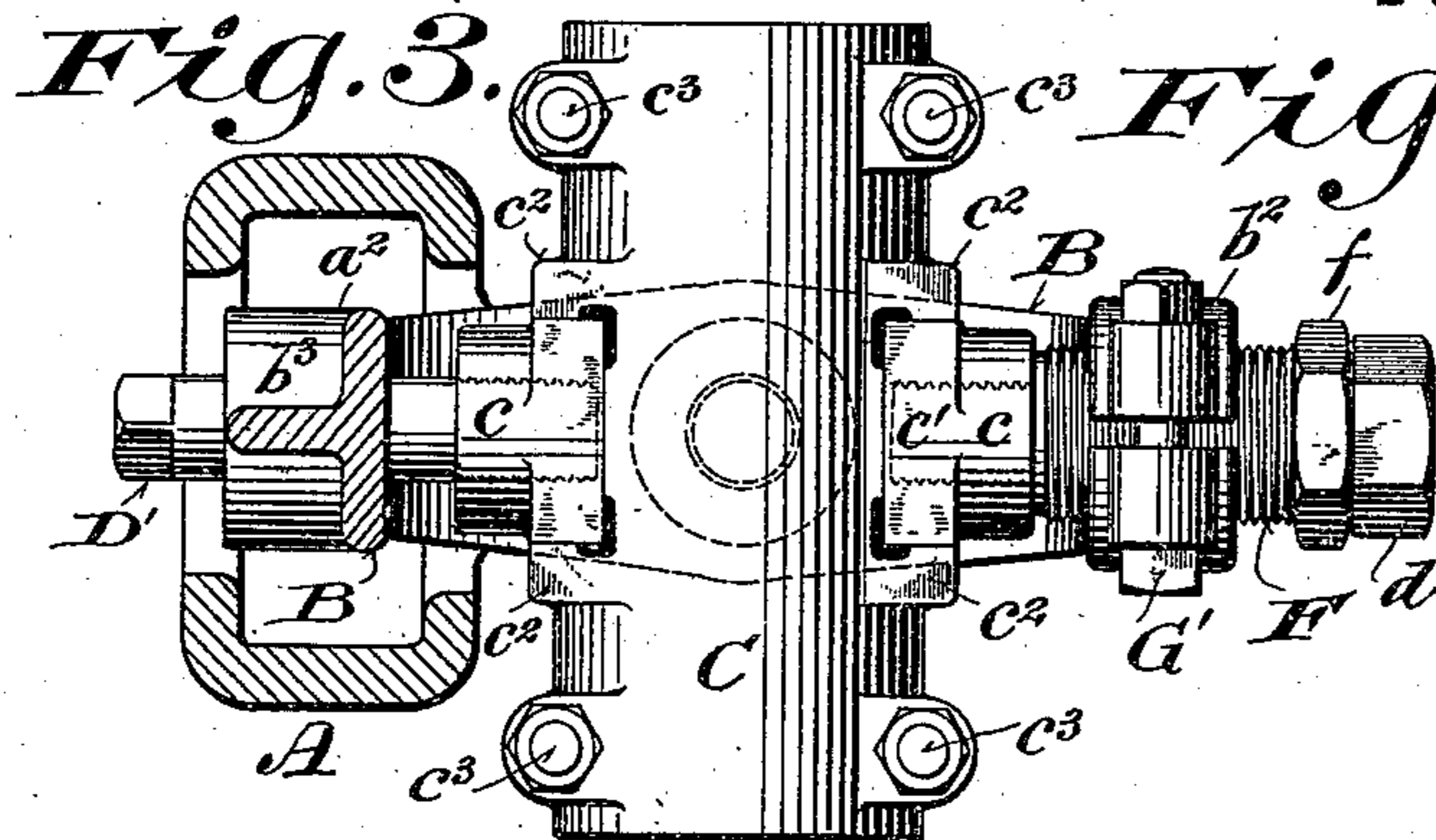


(No Model.)

E. J. MULLER.  
ADJUSTABLE BEARING.

No. 548,810.

Patented Oct. 29, 1895.



Witnesses:  
Geo. W. Young,  
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Inventor:  
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By *Wm. Henderson Smith* Attorney.

# UNITED STATES PATENT OFFICE.

ERNST J. MULLER, OF BUTTE, MONTANA.

## ADJUSTABLE BEARING.

SPECIFICATION forming part of Letters Patent No. 548,810, dated October 29, 1895.

Application filed April 19, 1895. Serial No. 546,310. (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 Adjustable 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 objects of my invention are to facilitate the adjustment of the bearing and the removal of shafting therefrom without disturbing its adjustment, and generally to simplify and improve the construction and operation of devices of this class.

It consists of certain peculiarities 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 views.

Figure 1 is a side elevation and partial vertical section cutting its axis transversely of an adjustable universal hanger-bearing embodying my invention. Fig. 2 is a front elevation and vertical section on the line 2 2, Fig. 1. Fig. 3 is a horizontal section on the line 3 3, Fig. 1; and Fig. 4, a horizontal section on the line 4 4, Fig. 1.

A designates a bracket for attachment to a ceiling or overhead support in the usual way. It is formed on the front side with hubs  $a$   $a'$ , bored in the same vertical line which intersects the axis of the box or bearing. The bracket is formed between these hubs with a vertical elongated recess or opening  $a^2$ .

B is a yoke formed on opposite sides with hubs  $b$ ,  $b'$ ,  $b^2$ , and  $b^3$ , the hubs  $b$   $b'$  being bored and internally threaded in line with each other and the hubs  $b^2$  and  $b^3$  being bored in line with each other at right angles to the hubs  $b$  and  $b'$ .

C is the box, the lower half of which is formed integrally on opposite sides with hubs  $c$   $c$ , having squared portions  $c'$   $c'$ , as shown in Figs. 2 and 3, which are fitted between pro-

jections  $c^2$   $c^2$  on the cap, and thus assist to hold the parts of the box in their proper relation to each other and to relieve the bolts  $c^3$ , by which they are connected, of strain. The hubs  $c$   $c$  are bored and threaded in line with each other at right angles to the axis of the box.

D and D' are pivot-pins having threaded portions which are adapted to be screwed fast into the hubs  $c$   $c$ . The pivot-pin D is formed with an enlarged angular head  $d$  and between its plain and screw-threaded portions with a shoulder adapted to abut against the end of the hub  $c$ , into which it is screwed. The pivot-pin D' is fitted to turn and move lengthwise in the bore of hub  $b^3$  and is squared at its outer end to receive a wrench.

E and E' are like or similar pivot-pins threaded at one end, so as to be screwed fast into the hubs  $b$  and  $b'$  of yoke B. The pin E has an enlarged angular head  $e$  and a shoulder between its plain and screw-threaded portions, and the pin E' is fitted to turn and move endwise in the bore of hub  $a$  and is squared at its outer end to receive a wrench.

F is a hollow screw threaded in the bore of hub  $b^2$  and fitted on the pivot-pin D, which is adapted to turn therein. F' is a similar hollow screw threaded in the bore of hub  $a'$  and adapted to turn on the pivot-pin E. These screws are formed at their outer ends with squared portions  $f$  to receive a wrench for turning them, and they are made slightly shorter than the distance between the heads and shoulders of the pins D and E, so as to prevent said pivot-pins from binding therein when their shoulders are screwed snugly against the hubs  $b$  and  $c$ . The hubs  $a'$  and  $b^2$  are split through their outer and upper sides, respectively, and provided with clamping-bolts G and G' for contracting them upon the hollow screws and holding the latter in place when they are adjusted as desired.

It will be observed that the axes of the several pivot-pins intersect each other in the axis of the box C, and said pins constitute, with the yoke B, a universal-joint connection with the bracket A, whereby the box adapts itself readily to any deflection or irregularity in the shaft which it supports.

To adjust the box vertically, the screw G is loosened and the hollow screw F' is turned by

means of its head or squared portion *f* in the proper direction to raise or lower the box, as desired. When the required adjustment is effected, the parts are secured in place by tightening the screw G. The horizontal adjustment of the box is effected by a like manipulation of the clamping-screw G' and the hollow screw F. If it is desired to take down the shaft, the pivot-pins D and D' may be unscrewed from the box C and the box removed with the shaft from the yoke B and bracket A, or the pivot-pins E and E' may be unscrewed from the yoke and the shaft, together with the box and yoke, removed from the bracket, in either case without disturbing the adjustments of the bearing, it being unnecessary to disturb the screws F and F'.

It will be observed that by the construction and arrangement of parts above described the heads or squared portions *ff* of the adjusting-screws F and F', as well as the heads of the pivot-screws D, D', E, and E', are all exposed and easily accessible, thus greatly facilitating the adjustments of the bearing and the taking down and putting up of shafting without disturbing such adjustments.

I do not claim herein, *per se*, a box formed integrally on one side with a pivot-stem or a yoke formed integrally on opposite sides with stems or provided with detachable stems, as shown in my application, Serial No. 518,331, filed July 23, 1894; nor do I claim herein a box provided with a pivot pin or bar on which it is adapted to turn or swing freely, or a yoke formed integrally with pivot-pins, as shown in my application, Serial No. 535,664, filed January 21, 1895.

I claim—

1. In a universal bearing the combination with a box and a suitable fixed support therefor, of a yoke, four pivot pins arranged in pairs perpendicular to each other, one pair detachably and rigidly secured in line with each other in opposite sides of the box, and adapted to turn freely in bearings therefor in the yoke, and the other pair detachably and rigidly secured in line with each other in opposite sides of the yoke, and adapted to turn in bearings in said support, and means of adjusting said pins endwise in their bearings and of holding them in place therein, substantially as and for the purposes set forth.

2. In a universal bearing the combination with a box, of a fixed support having two bores in line with each other, one being threaded and provided with a hollow screw, a yoke having two bores in line with each other, one

being threaded and provided with a hollow screw, and pivot pins secured in pairs to opposite sides of the box and yoke transversely to each other, one pair being adapted to turn in the hollow screw and opposite bore of the yoke, the other pair being adapted to turn in the hollow screw and opposite bore of said support, and one pin of each pair being held from endwise movement in the hollow screw in which it is inserted, substantially as and for the purposes set forth.

3. In an adjustable bearing the combination of a box, a suitable fixed support, a yoke, said support and yoke each having a plain bore and a split hub with a threaded bore in line therewith, and a clamping screw for contracting its bore, hollow screws threaded in the split hubs of said support and yoke, and pivot pins secured to opposite sides of the box and yoke transversely to each other, and adapted to turn in the bores and hollow screws of said support and yoke, one pin of each pair being held from endwise movement in one of said hollow screws, substantially as and for the purposes set forth.

4. In an adjustable bearing the combination with a fixed support and yoke, each having a hollow screw threaded therein and a plain cylindrical bore in line therewith, of a box and pivot pins threaded at their inner ends into opposite sides of said box and yoke, and adapted to turn in the hollow screws and bores of said yoke and support in lines intersecting the axis of the box and transverse to each other, the outer ends of said screws and pins having exposed wrench heads, substantially as and for the purposes set forth.

5. In an adjustable bearing the combination with a fixed support, of a yoke pivotally connected therewith, a box formed on opposite sides with hubs having screw-threaded bores, a cap formed with lugs adapted to engage with said hubs and to hold said cap in place on the box, and pivot pins threaded into said hubs and adapted to pivotally connect the box with said yoke in a line transverse to the pivot connection between said yoke and support, substantially as and for the purposes set forth.

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

ERNST J. MULLER.

Witnesses:

B. C. W. EVANS,  
JOHN B. MCCLERNAN.