

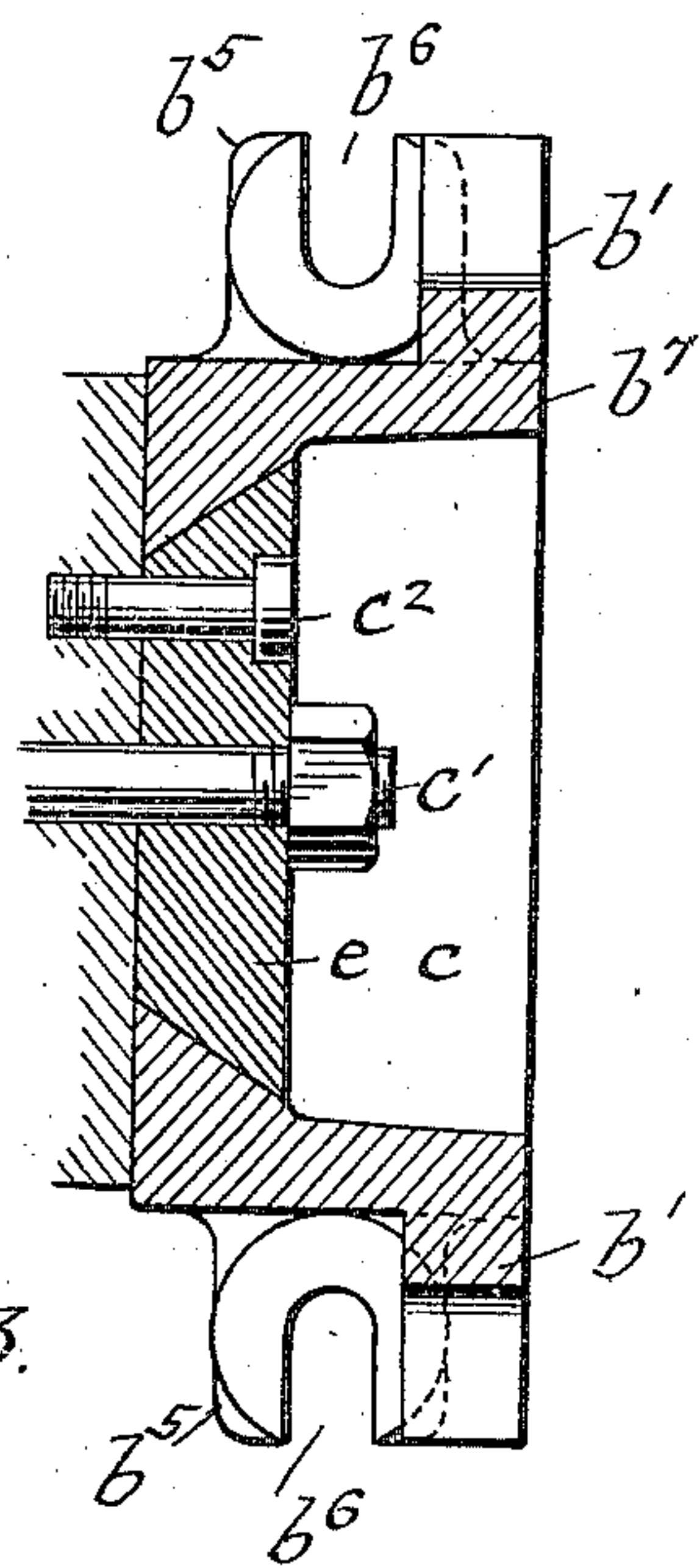
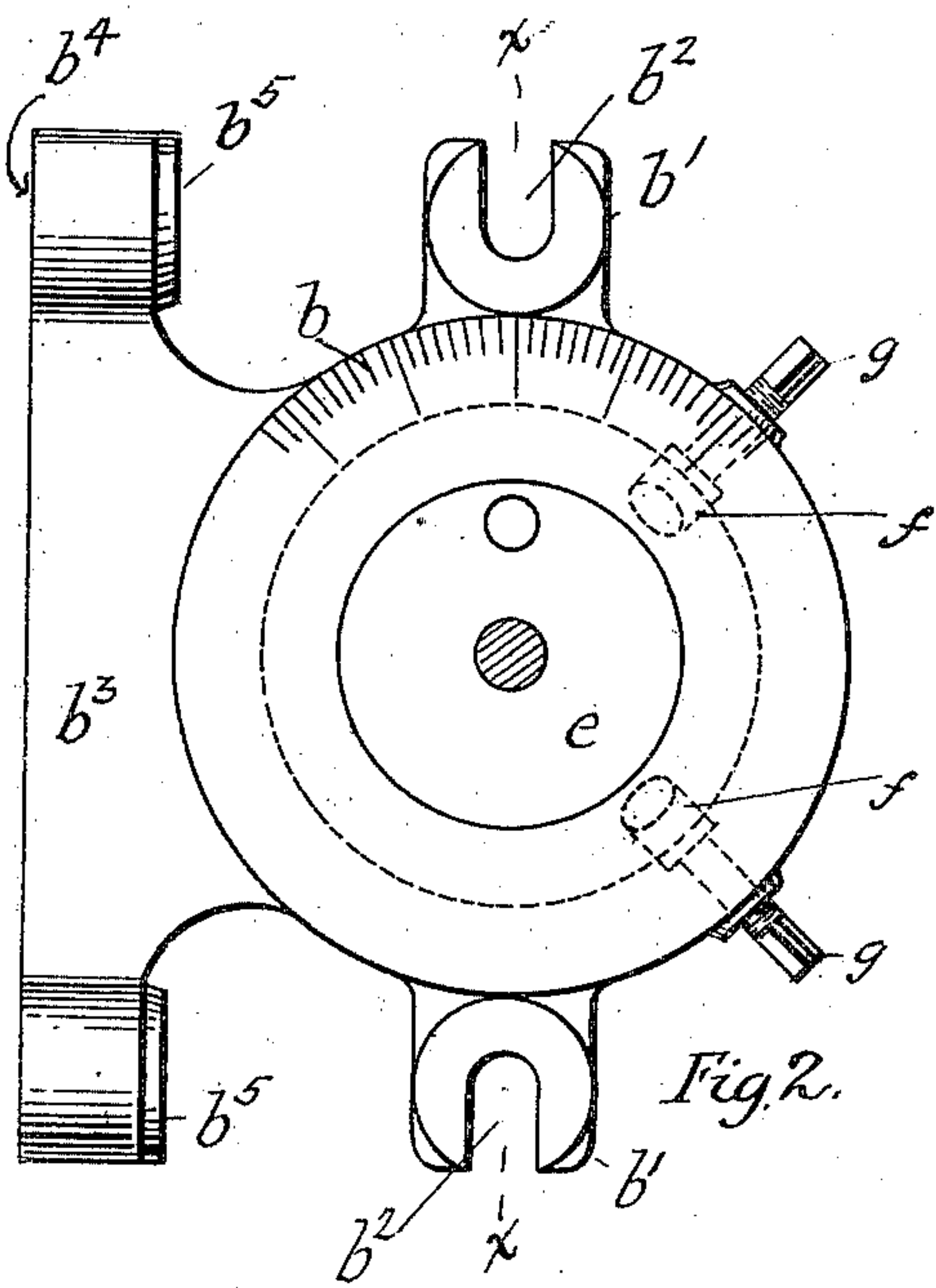
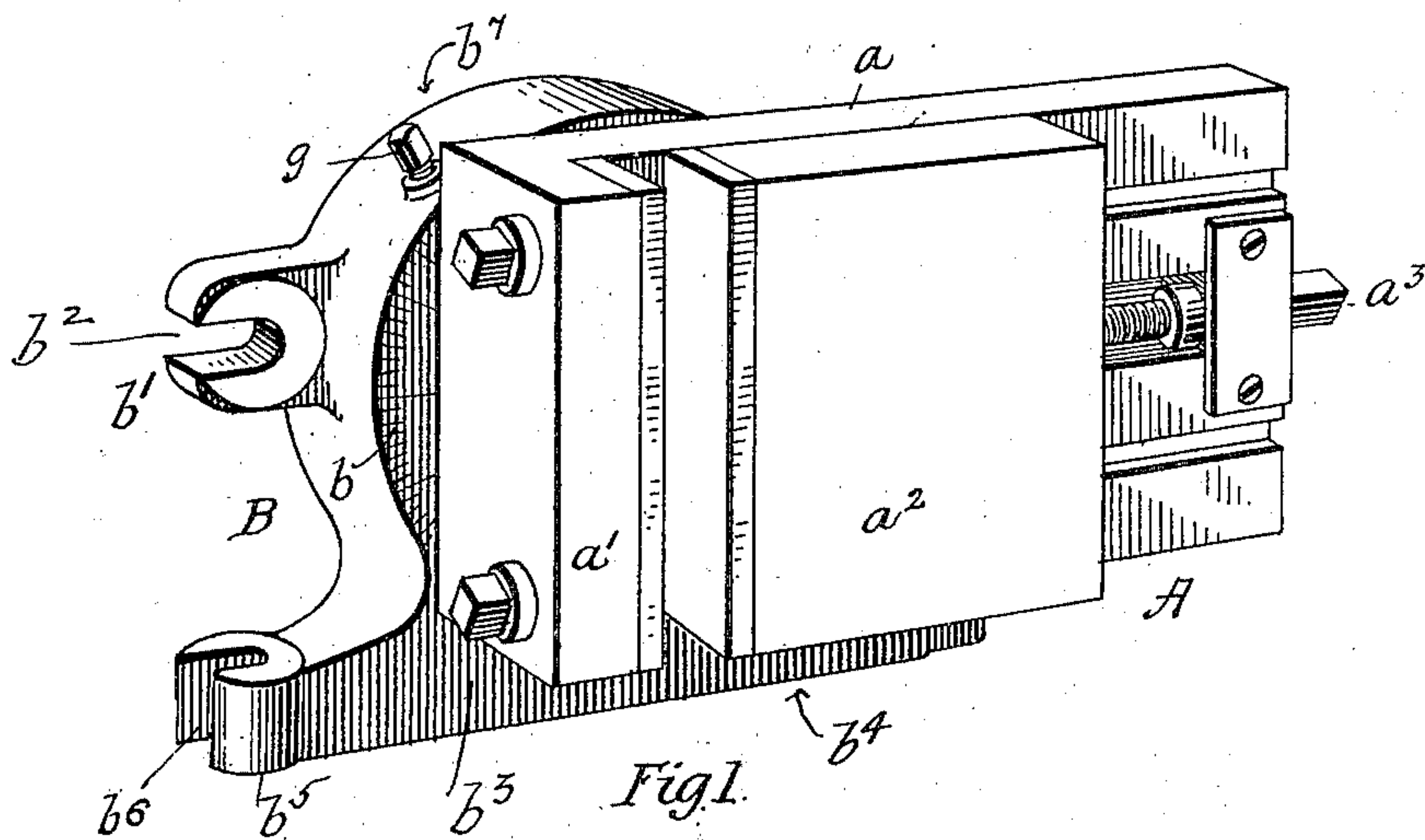
No. 652,441.

Patented June 26, 1900.

E. J. McCLELLAN.
MILLING MACHINE VISE.

(Application filed Apr. 11, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD J. McCLELLAN, OF NEW YORK, N. Y., ASSIGNOR TO THE GARVIN MACHINE COMPANY, OF NEW YORK.

MILLING-MACHINE VISE.

SPECIFICATION forming part of Letters Patent No. 652,441, dated June 26, 1900.

Application filed April 11, 1900. Serial No. 12,413. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. McCLELLAN, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Milling-Machine Vises, of which the following is a full, clear, and exact description.

This invention relates to milling-machines for working metal, and has special reference to the means for mounting and adjusting the vise which is used to hold the work upon the table or slide of the machine.

A form of vise commonly employed on milling-machines consists of a pair of jaws, one of which is movable with respect to the other, said jaws being swiveled or pivoted upon a base, which in turn is adapted to be bolted to the sliding table of the machine. With such a construction it is possible to support the vise in one plane only, which plane is horizontal; but it is often found desirable to mount the vise in an upright position upon the slide in order to use the machine to the best advantage; and it is one of the objects of my invention to so construct the base to which the vise is swiveled that the vise can be mounted in either a horizontal or vertical plane.

Another object of my invention is to provide improved means for swiveling the vise to the base, whereby large and true bearing-surfaces are provided, and an efficient lock may be utilized for holding the vise in any position in which it may be adjusted upon its base.

With the above objects in view the invention consists of a base for the vise having two surfaces standing at an angle to each other and means in conjunction with each surface whereby either of them may be secured to the slide or table of the milling-machine, and thus support the vise in either of two positions, depending upon the surface utilized; and the invention further consists of the combination, with a vise and its base, of a swivel connection between the two consisting of male and female parts having the shape of the frustum of a cone, with their conical surfaces forming a bearing upon which the parts turn.

The invention also consists of certain frictional locking devices arranged to cooperate with said surfaces to hold the vise in any position with respect to the base.

The invention will be described with particularity in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of the vise and base connected together. Fig. 2 is a plan of the base, and Fig. 3 is a section of the base on line $x x$ of Fig. 2.

No part of a milling-machine is shown, because the same forms no part of the present invention. It will be understood, however, that the vise and its base, hereinafter described, may be attached to the sliding table of any form or construction of milling-machine.

Referring to the drawings by letter, A indicates an ordinary milling-machine vise, and B the base to which it is swiveled. The vise may be of any approved construction; but as here shown consists of a plate a , having a fixed jaw a' , and a second plate a^2 , constituting an adjustable jaw and fitted to slide upon the plate a by turning a screw a^3 .

The base B consists of a cylindrical block, one face b^7 of which at right angles to its axis is planed off to make accurate fit against the surface of the sliding table of the milling-machine. Its opposite face is provided around a portion of its circumference with a scale b for a purpose which will hereinafter appear. It is also provided at diametrically-opposite points with two ears $b' b'$, having notches b^2 , which admit of the introduction of bolts parallel to the axis for securing the said planed surface against the slide of the milling-machine.

The base is provided with an extension b^3 , having a planed surface b^4 at right angles to the other planed surface described and parallel to the axis of the base, which planed surface is also adapted to be secured against the surface of the sliding table of the milling-machine and for this purpose is provided with ears b^5 , containing notches b^6 for the introduction of fastening-bolts in a position at right angles to the surface b^4 . It will thus be seen that the base may rest flat upon its side or upon one edge and may be readily se-

cured to the table in either of these positions by means of suitable bolts inserted at the places described and engaging with the table.

For swiveling the vise to the base the latter
 5 is provided with a large central opening *c*, one end of which adjacent to the scaled side is formed into a conical bearing surface or seat the smaller diameter of which is at the surface upon which the scale is marked.
 10 Into this seat is fitted a disk *e*, the periphery of which is conical, thus making the disk the frustum of a cone. The disk is passed to its seat from below and is secured to the plate *a* of the vise by means of a center bolt *c'* and
 15 an eccentrically-placed bolt *c''*. Thus the disk and its seat form an interlocking or dovetail connection between the vise and the base, which permits the vise to swivel around the axis of the base. The vise will be pro-
 20 vided with a mark or index at a convenient point to be used in connection with the scale *b* to fix the vise at a determined angle upon the base. For securing the vise in an angular position, into which it may be adjusted, the
 25 base is provided with two radial passages ninety degrees apart, containing shoe *f*, the faces of which are exposed in and form a part of the conical surfaces of the bearing in the base. These shoes are backed up by adjust-
 30 ing-screws *g*, by means of which they may be forced against the conical surface of the disk with sufficient pressure to lock the disk and the vise attached to it against any rotary motion. To adjust the vise, it is of course nec-
 35 essary to first slacken the bolts.

Having described my invention, I claim—

1. The combination of a vise for milling-

machines and a base to which it is swiveled, said base being provided with two surfaces at right angles to each other and means for 40 mounting the base with either of said surfaces against the support.

2. The combination of a vise for milling-machines and a base to which the vise is swiveled, said base being provided with two 45 sets of passages for fastening-bolts, one set of passages being parallel to the axis of the swivel-joint, and the other at right angles thereto.

3. The combination of a milling-machine 50 vise, a base therefor having two supporting-surfaces and a swivel connection between them, consisting of a disk attached to one member and having the shape of the frustum of a cone, and a seat formed in the other 55 member and having a corresponding shape, and means for locking the members at any desired relative position.

4. The combination of a vise for milling-machines, a base therefor having two sup- 60 porting-surfaces, a swivel connection between them consisting of a disk attached to one member and having the shape of the frustum of a cone and a seat in the other member having a corresponding shape, and radial 65 shoes forming a part of said seat and provided with means for adjusting them in a radial direction, substantially as described.

In witness whereof I subscribe my signature in presence of two witnesses.

EDWARD J. McCLELLAN.

Witnesses:

JOHN T. WILLIAMS,
 CHAS. T. LUTHER.