

(No Model.)

H. U. SEAMAN.
ENGRAVER'S VISE OR BLOCK.

No. 420,968.

Patented Feb. 11, 1890.

FIG. 1.

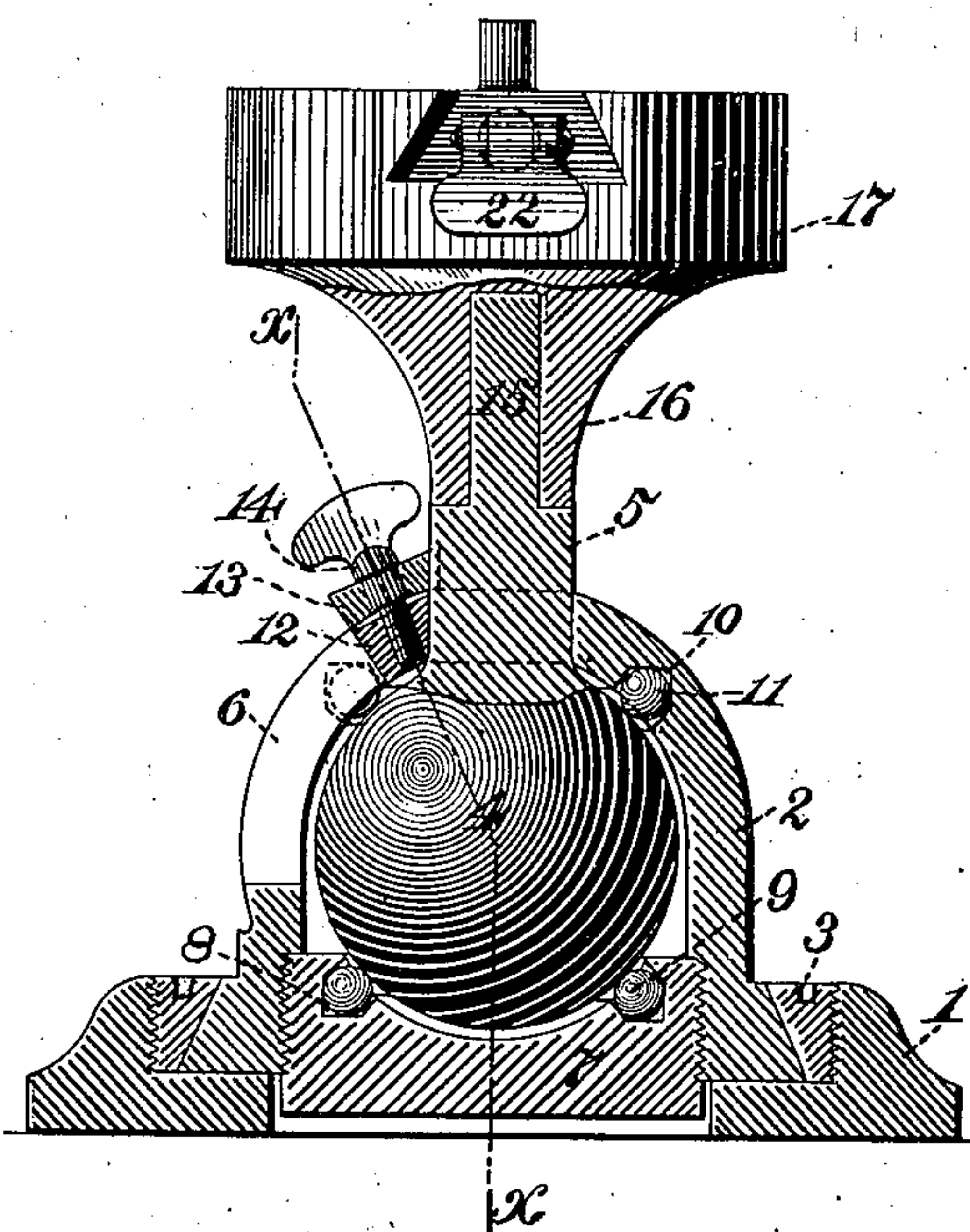


FIG. 3.

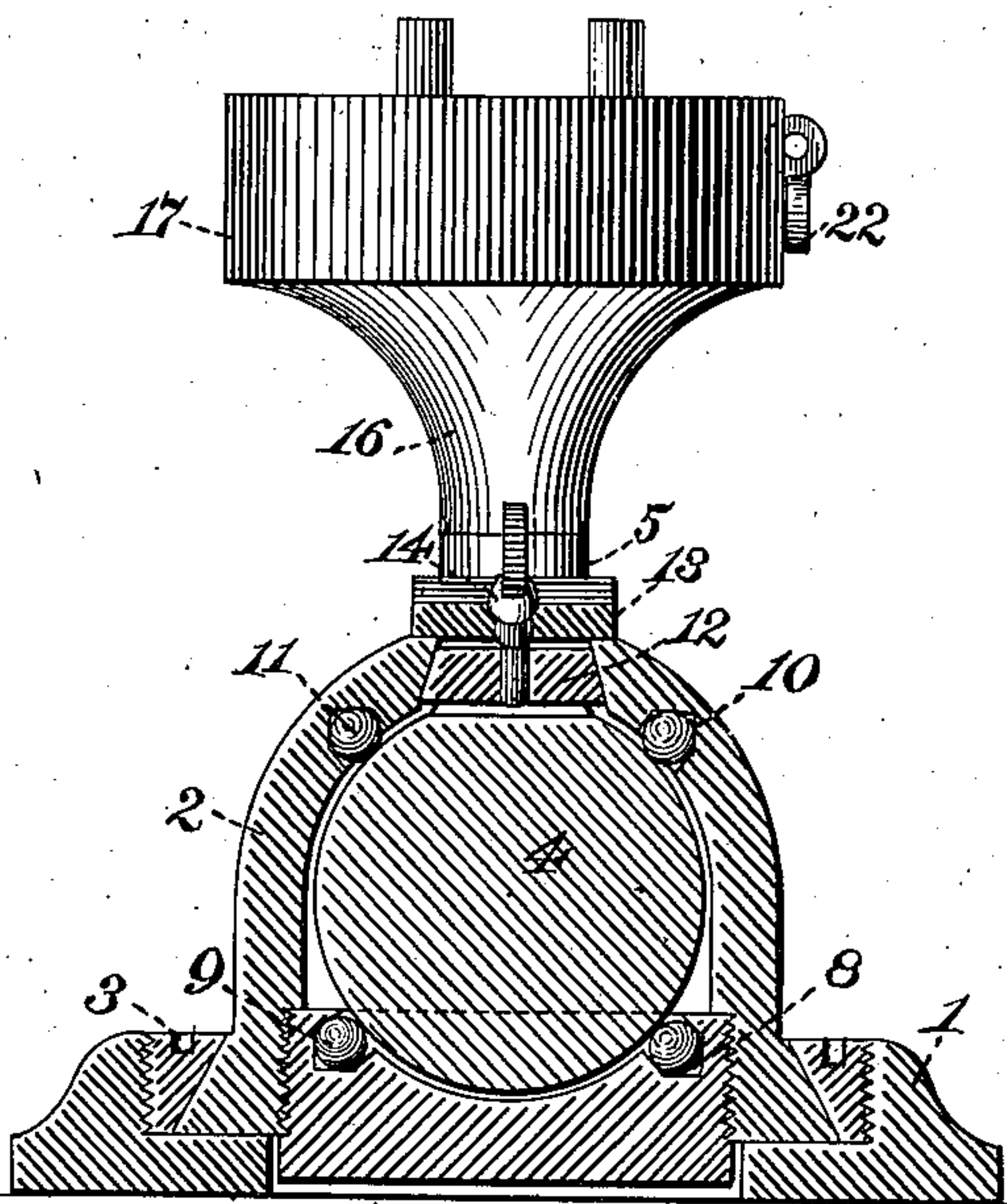


FIG. 2.

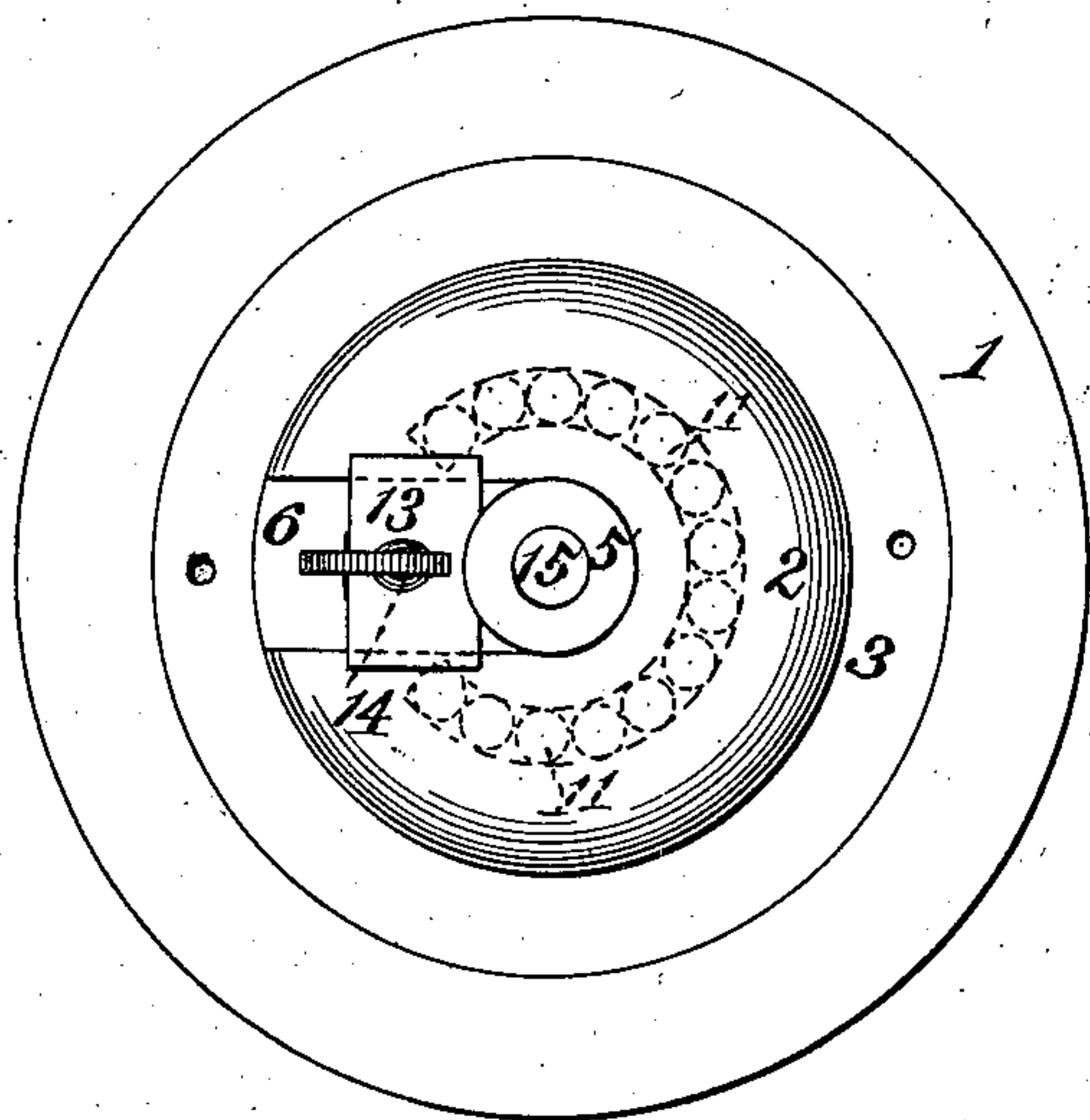
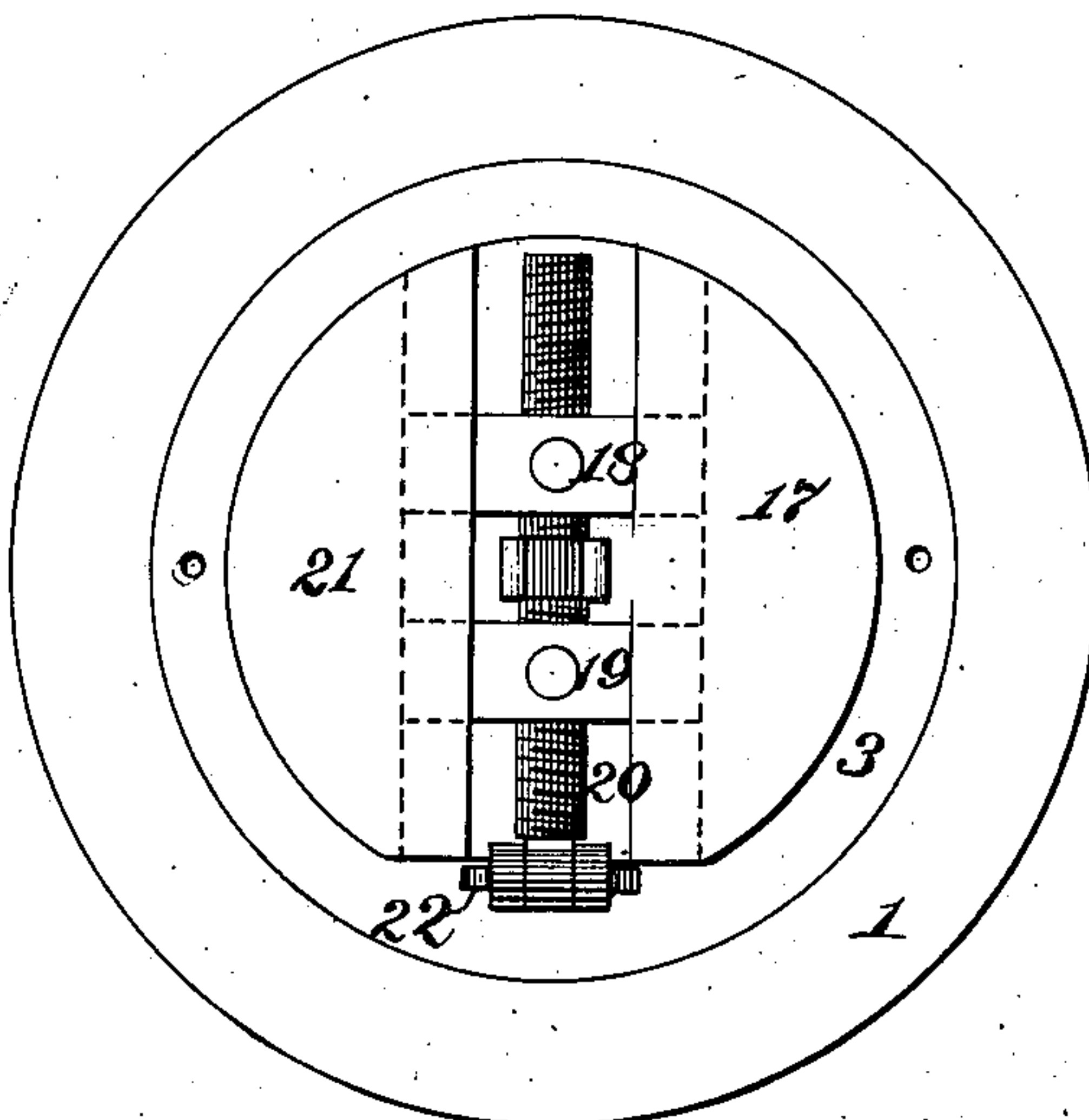


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HOMER U. SEAMAN, OF WASHINGTON, PENNSYLVANIA.

ENGRAVER'S VISE OR BLOCK.

SPECIFICATION forming part of Letters Patent No. 420,968, dated February 11, 1890.

Application filed April 3, 1889. Serial No. 305,880. (No model.)

To all whom it may concern:

Be it known that I, HOMER U. SEAMAN, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Engravers' Vises or Blocks, of which improvements the following is a specification.

The invention described herein relates to certain improvements in engravers' vises or blocks, and has for its object a construction whereby horizontal and vertical adjustments of the work-holding part may be easily made.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view, partly in section and partly in elevation, of the vise or block embodying my invention. Fig. 2 is a plan view, the upper portion of the work-holder being removed. Fig. 3 is a view partly in section and partly in elevation, the section being taken on the line $x x$, Fig. 1; and Fig. 4 is a top plan view of the block.

In the practice of my invention I provide an annular base 1, having a threaded recess therein for the reception of the lower end of the socket 2, the outer wall of that part of the socket fitting within the recess in the base being outwardly inclined, as shown in Fig. 1. The socket 2 is held in position within the base by a ring 3, having its inner face inclined and constructed to engage and bear upon the inclined face of the socket 2, and its outer edge threaded, so as to engage the threaded outer wall of the recess in the base 1. Within the socket 2 is placed a ball 4, provided with a stem 5, projecting through a slot 6 in said socket. The ball is held in position vertically by a block 7, screwing into the lower end of the socket, as shown in Fig. 1. In the upper end of the block is formed a recess for the reception of a portion of the ball 4, and around the edges of the said recess is formed a groove 8 for the reception of a series of anti-friction balls 9, which support the ball 4 in position and permit of the free rotation of the same either horizontally or vertically. A groove 10, extending partially around the inner wall of the socket 2—that is, from one side of the slot 6 around to the opposite side of said slot—is formed at or

near the upper end of the socket for the reception of anti-friction balls 11, against which the ball 4 bears, as shown.

It will be readily understood that the ball 4, mounted, as above described, in the socket 2, can be rotated horizontally or vertically, the stem 5, during the latter movement, moving in the slot 6 in the socket. In addition to the horizontal rotation of the ball, the socket 2 may be rotated horizontally by loosening the ring 3, provided with holes for the insertion of the pins of a spanner or other suitable tool, whereby the ring may be turned, thereby permitting the socket 2 to rotate freely in the recess in the base 1. In order to hold the ball in a vertical position and the work-holder carried thereby, as will be hereinafter described, and also in order to permit of the adjustment of the work-holder to any desired inclination, I provide a stop or clamp consisting of a block 12, having two of its sides outwardly inclined and adapted to engage the inwardly-inclined walls of the slot 6, and of a plate 13, extending across the slot and adapted to be drawn firmly against the outer wall of the socket by a screw 14, passing through the plate 13 and screwing into the block 12, which is also by the same movement of the screw wedged up into the slot, as seen in Fig. 3. The plate 13 is provided on that edge adjacent to the stem 5 with a circular notch, in which the stem rests, as shown in Fig. 2.

When it is desired to hold the work-holder in a horizontal position, as shown in Fig. 1, the clamp, hereinbefore described, is moved up into the position shown in Figs. 1 and 2; but should it be desired to shift the work-holder into an angular position the screw is turned back and the clamp slipped down into the desired position in the slot 6, whereupon the ball 4, with its work-holder, may be turned vertically until the stem comes into engagement with the plate 13.

The stem 5 is provided with a pin 15, as shown in Fig. 1, said pin fitting into a hole in the stem 16 of the work-holding block 17. In the face of this block is formed a groove having undercut walls extending entirely across the face of the block, and in said groove are mounted the dovetailed blocks 18 and 19,

said blocks being moved away from and toward each other by a right-and-left-hand screw 20, said screw being held from longitudinal movement by a fork 21, engaging a groove midway of said screw, as shown. This screw is rotated by a handle 22, hinged to one end of the screw and adapted when not in use to turn down onto a flattened portion on the work-block 17.

10 I claim herein as my invention—

1. In an engraver's vise or block, the combination of a base having a recess therein, a socket adjustably mounted in said base, a ball adjustably mounted in the socket, and a work-
15 holder carried by the ball, substantially as set forth.

2. In an engraver's vise or block, the combination of a base having a recess therein, the vertical walls of said recess being threaded, 20 a socket having the outer wall at its lower end inclined, and an externally-threaded ring screwing into the recess in the base and having an inclined inner wall, a ball fitting in

said socket, and a work-holder carried by the ball, substantially as set forth. 25

3. In an engraver's vise or block, the combination of an internally-threaded socket, an externally-threaded block fitting in said socket and grooved, as described, a series of anti-friction balls arranged in said groove, a
30 ball fitting in said socket, and a work-holder carried by the ball, substantially as set forth.

4. In an engraver's vise or block, the combination of a vertically-slotted socket, a ball mounted in the socket and having a stem projecting through the slot, a clamp for supporting the ball and stem in any desired position, and a work-holder carried by the ball, substantially as set forth. 35

In testimony whereof I have hereunto set my hand.

HOMER U. SEAMAN.

Witnesses:

DARWIN S. WOLCOTT,
R. H. WHITTLESEY.