No. 685,338. Patented Oct. 29, 1901.

R. LEUSCH.

WATCHMAKER'S TOOL.

(Application filed Feb. 14, 1901.)

(No Model.)

Fig. 1.

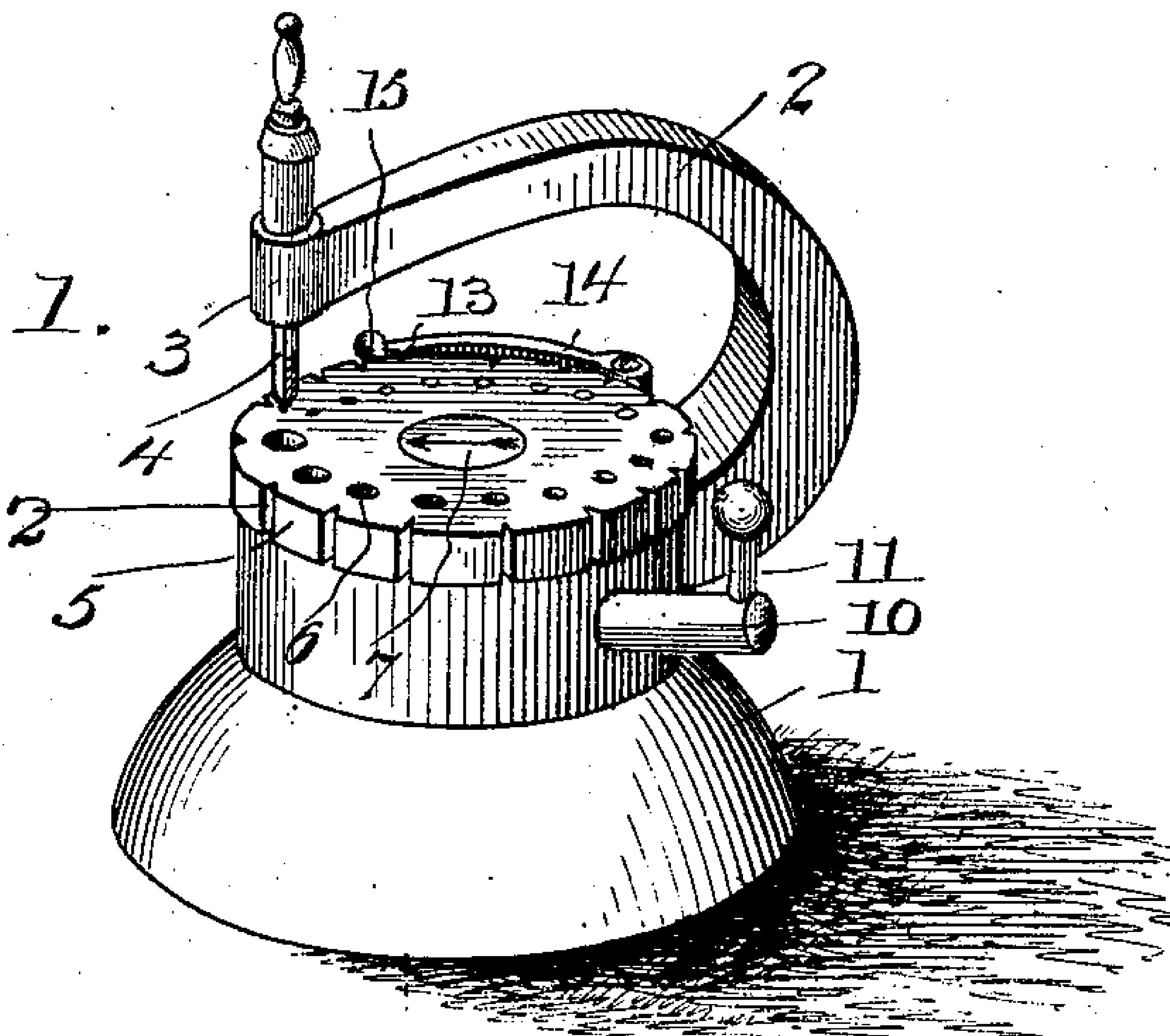


Fig. 2

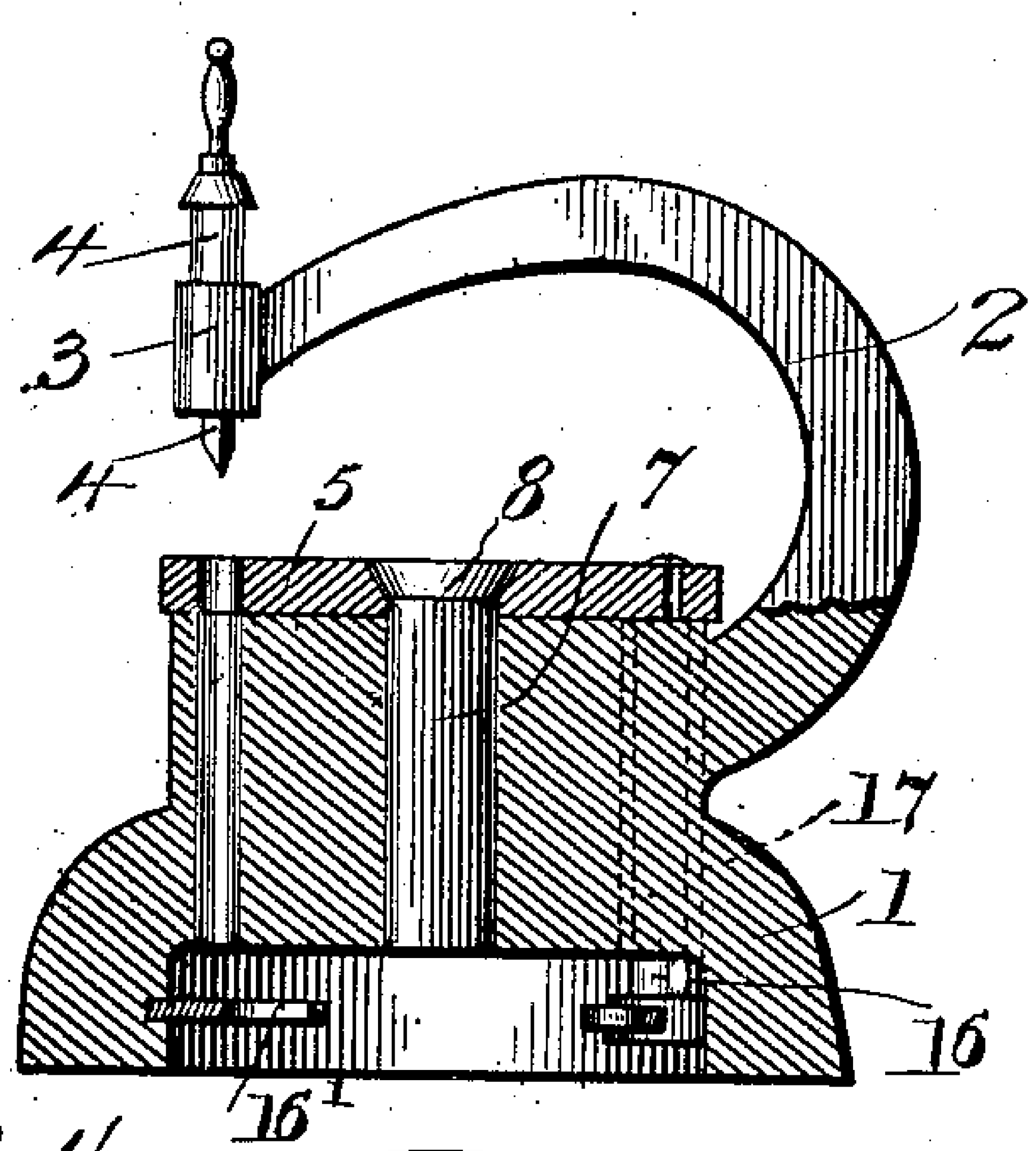


Fig. 3.

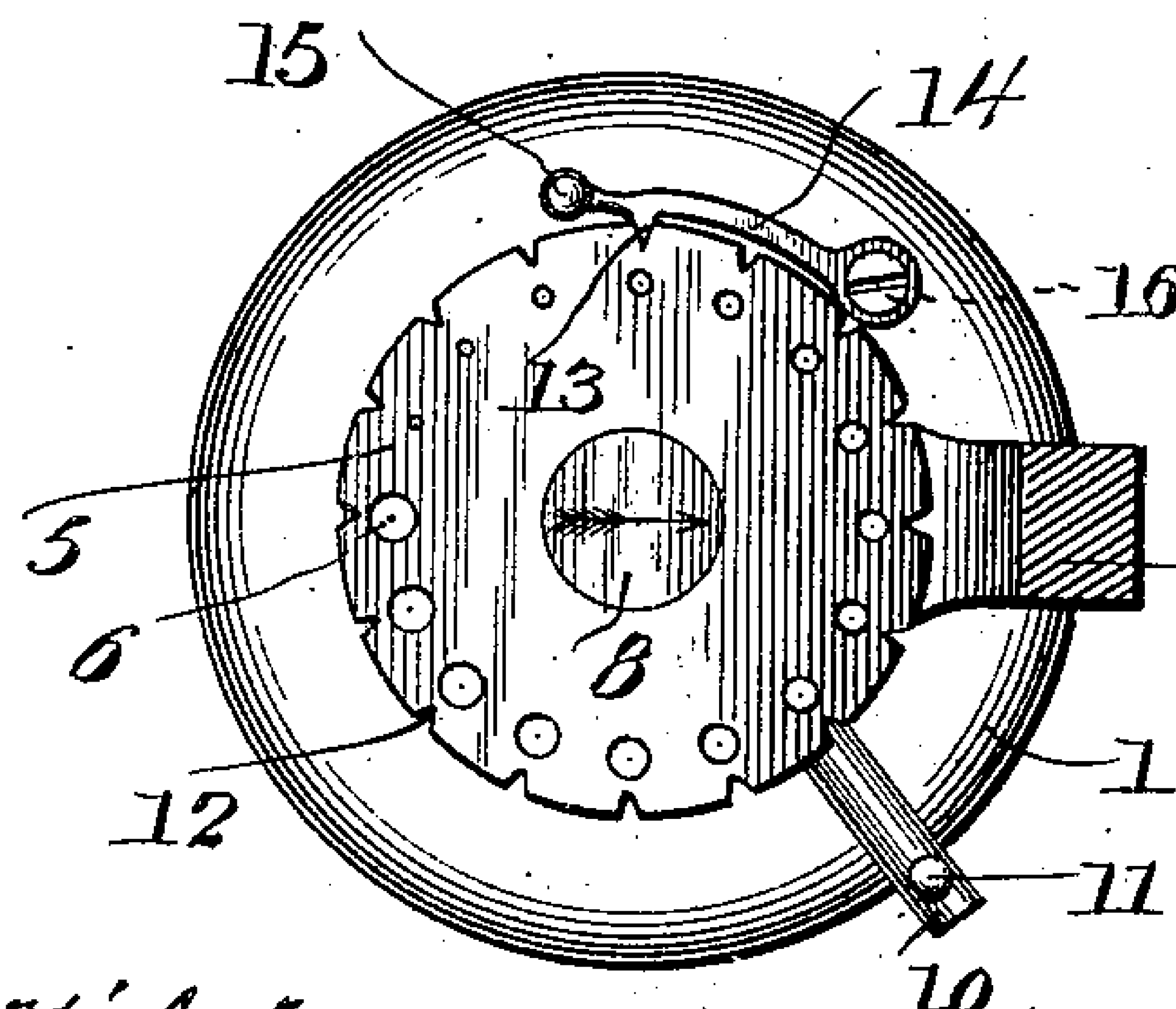


Fig. 5.

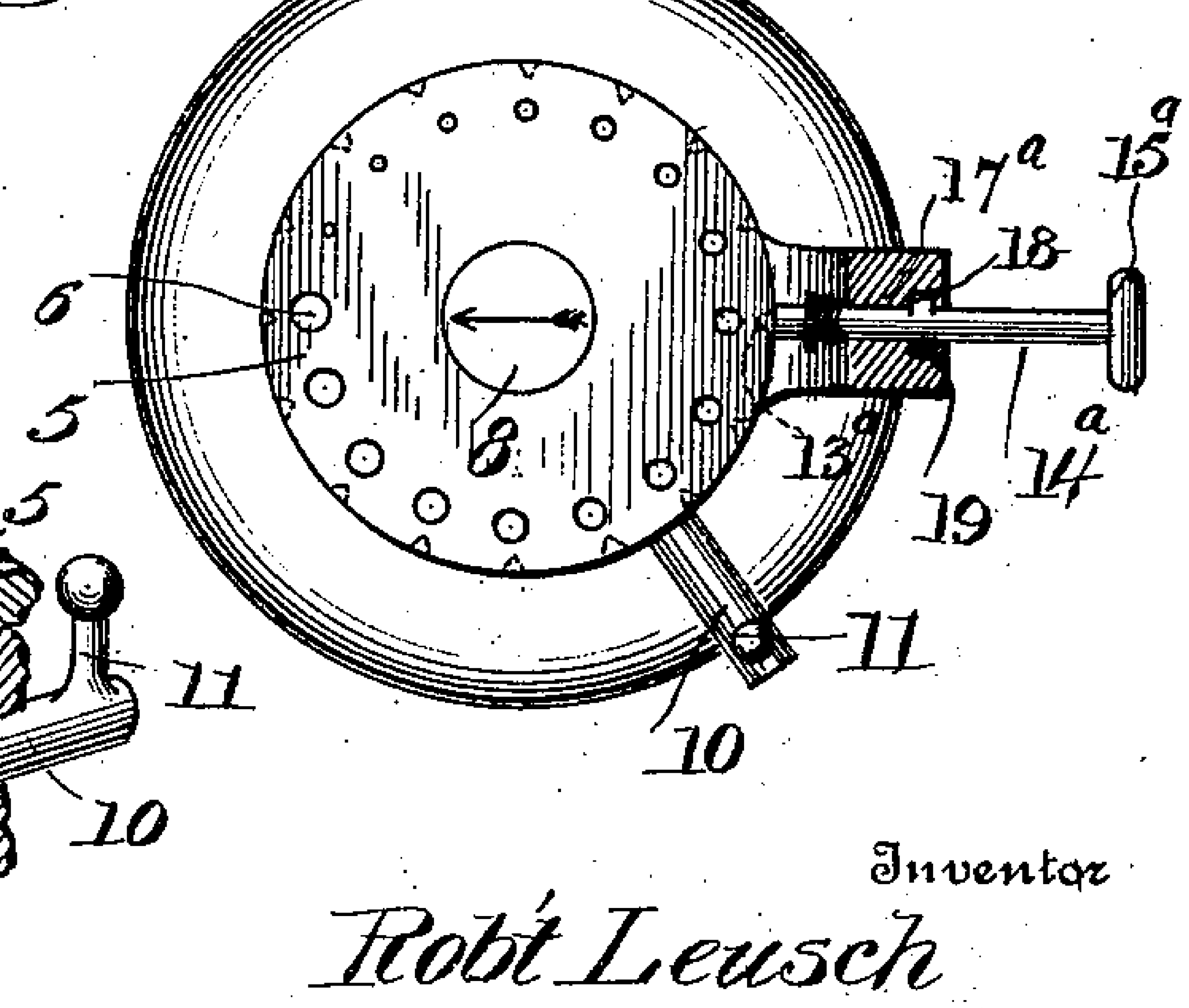


Fig. 4.

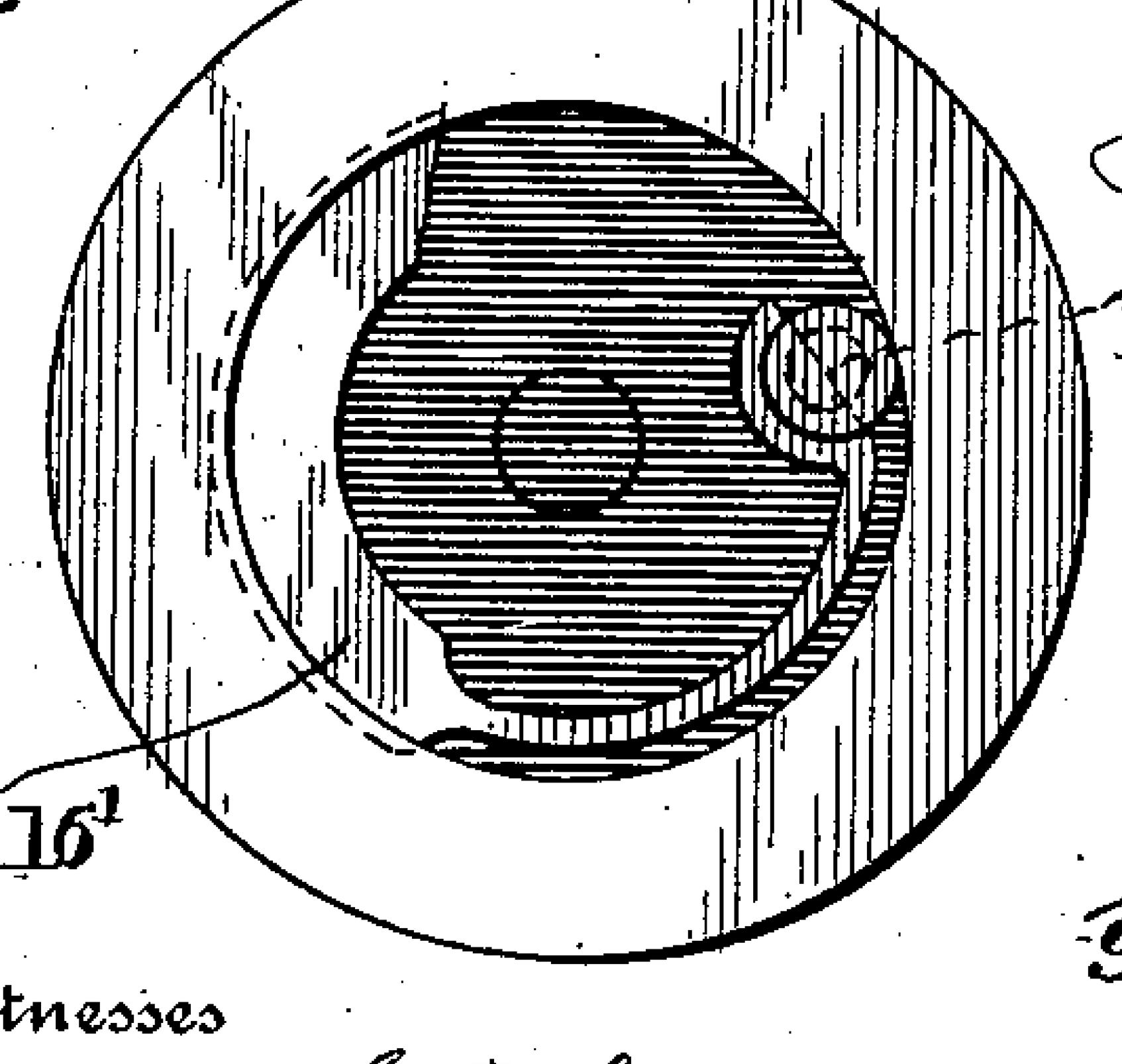
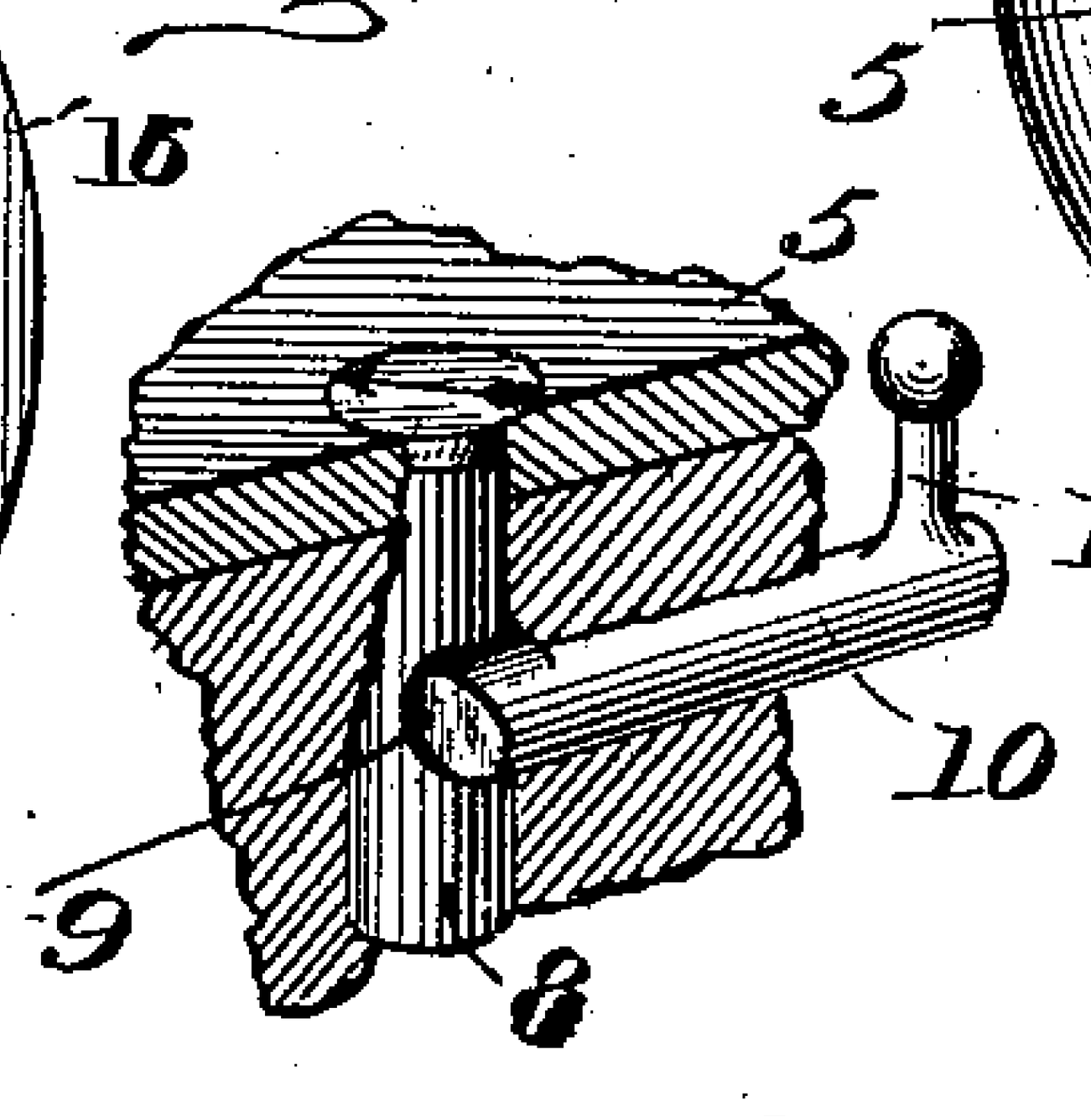


Fig. 6



Witnesses
Fenton S. Belt,
J. Albrillson

Inventor
Robt Leusch

By H. B. Willson & Co
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT LEUSCH, OF PHILADELPHIA, PENNSYLVANIA.

WATCHMAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 685,338, dated October 29, 1901.

Application filed February 14, 1901. Serial No. 47,259. (No model.)

To all whom it may concern:

Be it known that I, ROBERT LEUSCH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Self-Centering Staking-Tools for Watchmakers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in staking tools or devices employed by watchmakers for removing the staffs or stakes from balance and other wheels; and its object is to provide a device of this character embodying simple and effective means for rendering it self-centering, whereby either opening in the disk or bed-plate may be accurately and quickly brought into line with the plunger for use.

With this and other minor objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a staking-tool embodying my invention. Fig. 2 is a central vertical sectional view of the tool. Fig. 3 is a horizontal section through the punch-carrying arm, showing the base, bed-plate, and self-centering means in top plan view. Fig. 4 is a bottom plan view of the base, showing the holding-spring and coöperating end of the pivot-bolt. Fig. 5 is a view similar to Fig. 3, showing a modification. Fig. 6 is a detail view showing means for tightening the disk 5.

Referring now more particularly to the drawings, the numeral 1 designates the base or foot of the tool, from which rises an arm or gooseneck 2, provided at its free end with a tube or guide-sleeve 3 for the punch or plunger 4. On the foot 1 is mounted a rotary bed-plate or disk 5, having a series of graduated openings 6, either one of which is adapted by turning said plate to be brought into line with the said sleeve 3 to coöperate with the plunger. The said disk or bed-plate is mounted to turn upon a vertically-sliding bolt 7, mounted in the base and having its head 8 countersunk in the bed-plate. This bolt may be drawn down to clamp the bed-plate down upon the base by means of a cam or eccentric 9, engaging the lower end of the bolt, which cam or eccentric is carried by or formed upon a shaft 10, having an operating-handle 11.

The construction thus far described is one in common use, and the operation thereof will be readily understood by those versed in the art.

In carrying my invention into practice I provide the rotating disk or bed-plate 5 with a series of notches 12 in its edge, forming seats equal in number to and arranged in line with the said openings 6. These seats are adapted to receive the tooth 13 of a pawl 14, movable toward and from the disk and having an operating-handle or finger-piece 15. This pawl is mounted at one end upon the squared upper end of a shaft 16, journaled in a bearing 17, formed upon the base 1, and is confined in place by a screw or other suitable fastening engaging a threaded opening in the said upper end of the shaft. The pawl is adapted to be held into or out of locking engagement by a segmental plate-spring 16, occupying a groove-chamber or opening in the bottom of the base. The free end of the spring bears upon the lower end of the shaft 15 and is adapted when the pawl is engaged with one of the aforesaid seats to engage a flattened face formed upon said shaft to hold the shaft against casual rotation and prevent accidental retraction of the pawl. When the pawl is swung outwardly with sufficient force, however, the free end of the spring will ride over said flattened face and bear upon the cylindrical surface of the shaft and by frictional contact therewith hold the same and the pawl from accidentally swinging into engaging position.

An arrow or other suitable indicator is placed upon the head 8 of the bolt 7 and indicates the position to which the desired one of the openings 6 must be adjusted to be brought into axial alinement with the plunger 4. To bring any one of the said openings 6, therefore, into operating position, it is simply necessary to turn the disk or plate 5 until the selected opening is in line at front with the arrow and to then engage the pawl with the alined notch in the edge of the disk,

when said disk will be firmly held against movement. The cam or eccentric 9 may be operated, if desired, to draw the bolt 7 down to clamp the disk, but this is not essential, as the pawl is adapted to hold the disk firmly, and the cam and coöperating parts may be dispensed with, if desired, although I prefer to employ both the cam and pawl, so that one may be used in case of injury to the other or the two used in conjunction where an absolutely firm holding of the disk against both vertical and rotary play is deemed necessary or desirable. By this construction the device is made self-centering and the disk may be quickly and conveniently adjusted to bring any one of the openings 6 into position to cooperate with the plunger.

In Fig. 5 I have shown a modification in which the pawl 14^a is spring-actuated and mounted to slide horizontally in a bearing 17^a on the base and is provided at one end with a tooth 13^a and at the opposite end with a knob or finger-piece 15^a for convenience in operating it. The pawl is provided with a pin 18, which is adapted to engage a slot 19 in the outer edge of the bearing when the tooth of the pawl is engaged with one of the seats 12 to prevent axial play of the pawl and to also engage the outer edge of said bearing to hold the pawl retracted, which may be accomplished by giving the pawl a quarter-turn to bring the pin at an angle to its former position to bear upon the outer edge of said bearing. The operation of this form of the disk-holding means will be readily understood from the above description, taken in connection with the drawings. The spring acting on the pawl may be dispensed with in some cases, if desired.

Changes in the form, proportion, and minor details of construction may of course be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a staking-tool, the combination, with a base and plunger, of a rotary disk having a series of openings adapted to be brought into position to coöperate with the plunger and a series of seats corresponding with said openings, means for indicating when the desired opening is brought into proper position, a shaft journaled in a bearing in the frame, a pawl mounted upon said shaft to swing into and out of contact with the seats, and a spring engaging the shaft for holding the same and the pawl into and out of engaging position, substantially as described.

2. In a staking-tool, the combination with a plunger, of a base having a chamber in its lower end, the wall of which is formed with a groove, a shaft mounted vertically in the base and carrying an indicator, a rotary disk mounted upon said shaft and seated on the base and having a series of openings adapted to be brought into position to coöperate with the plunger, and a series of seats corresponding with said openings, a second shaft journaled in the frame and having its lower end located within said recess and formed with a flattened portion, a pawl rigidly connected to said shaft and adapted by the movement thereof to be swung into and out of engaging position, and a spring mounted in the recess in the base and engaging the lower end of the pawl and shaft and having a portion mounted in said groove in the base, said spring serving to hold the shaft and pawl into and out of engaging position, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT LEUSCH.

Witnesses:
JOHN W. HARVEY,
ROBT. GILLESPIE.