

No. 891,111.

PATENTED JUNE 16, 1908.

O. W. STITH.  
HANDLE LATHE HEAD.  
APPLICATION FILED JAN. 30, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

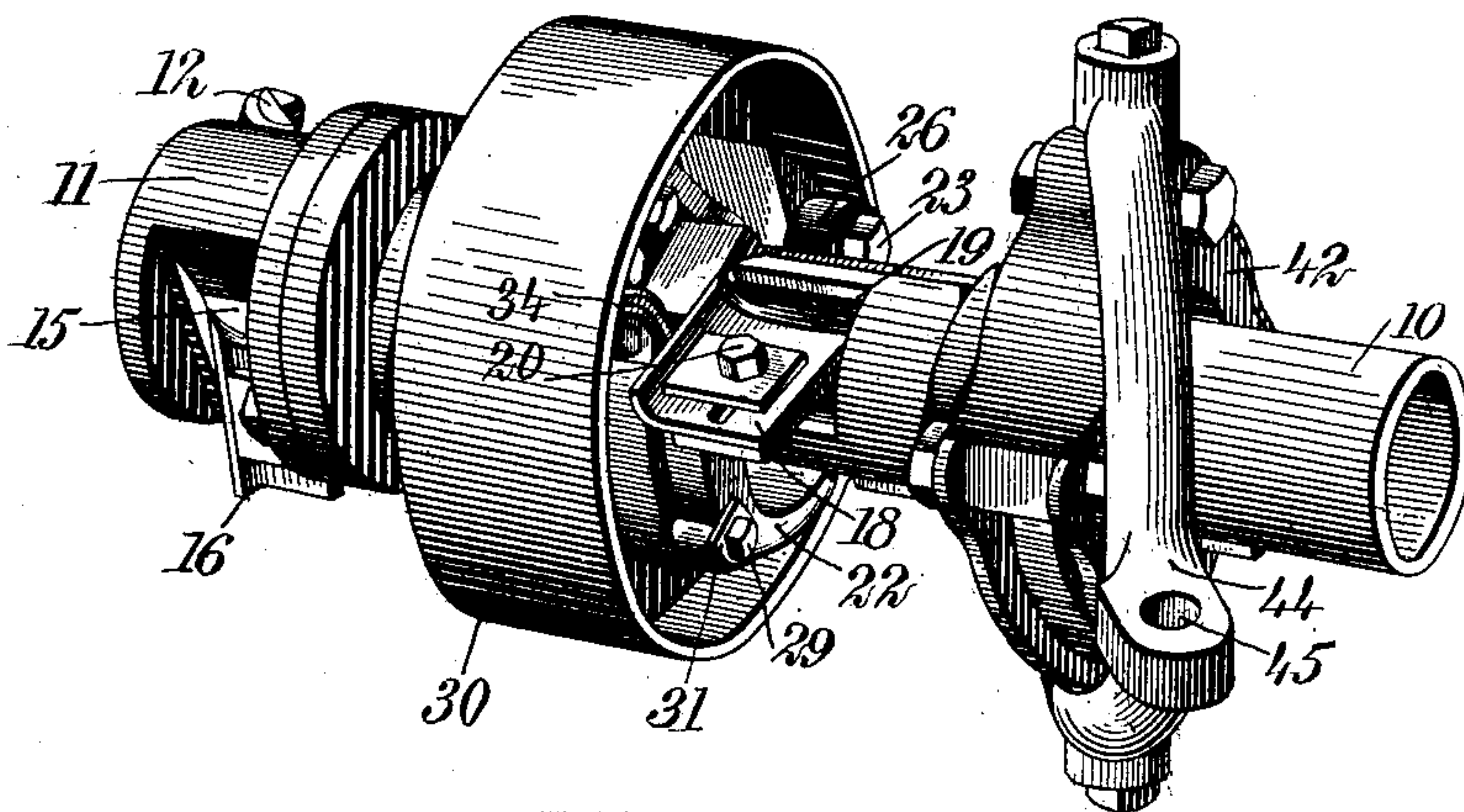


Fig. 2.

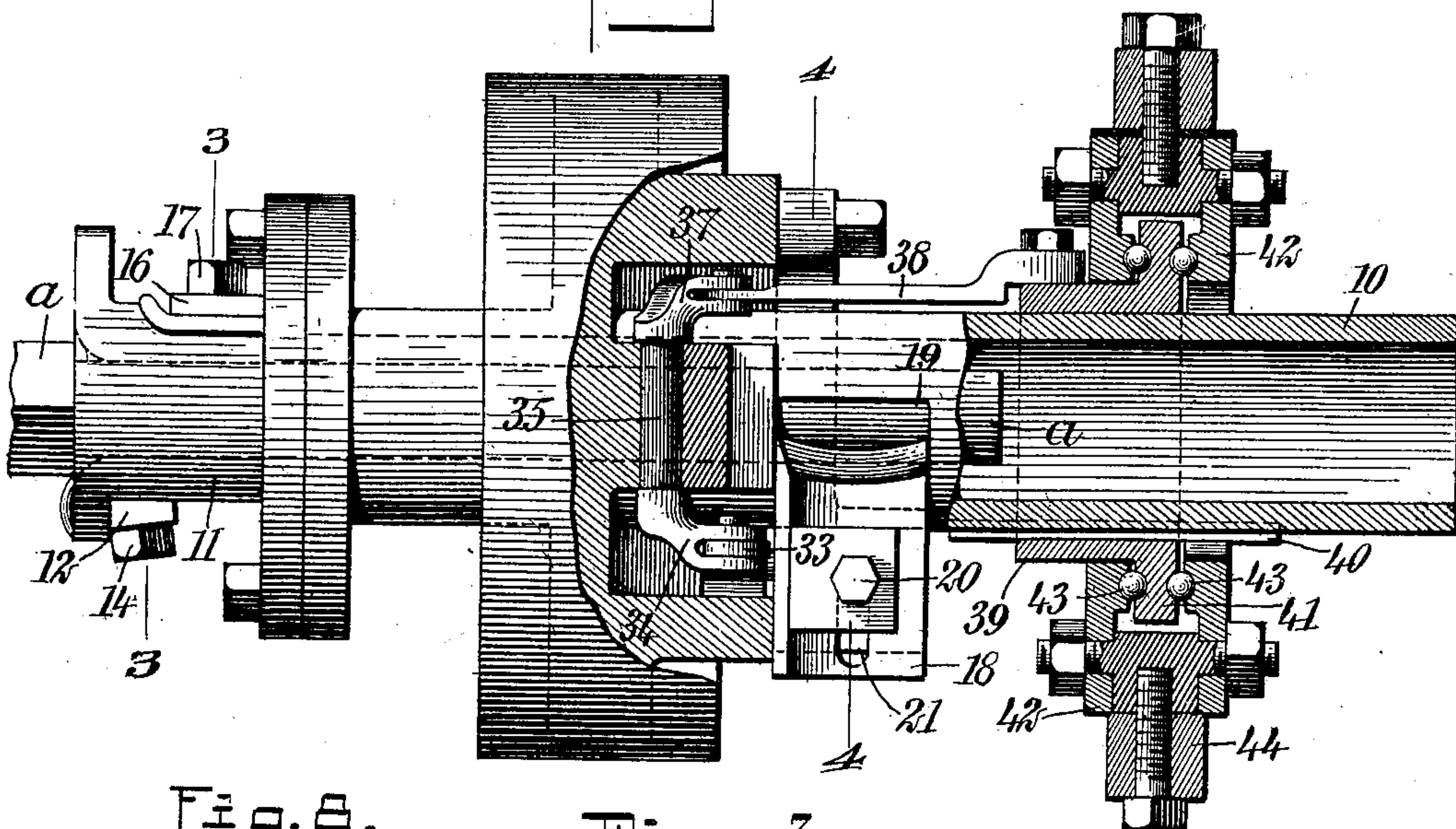
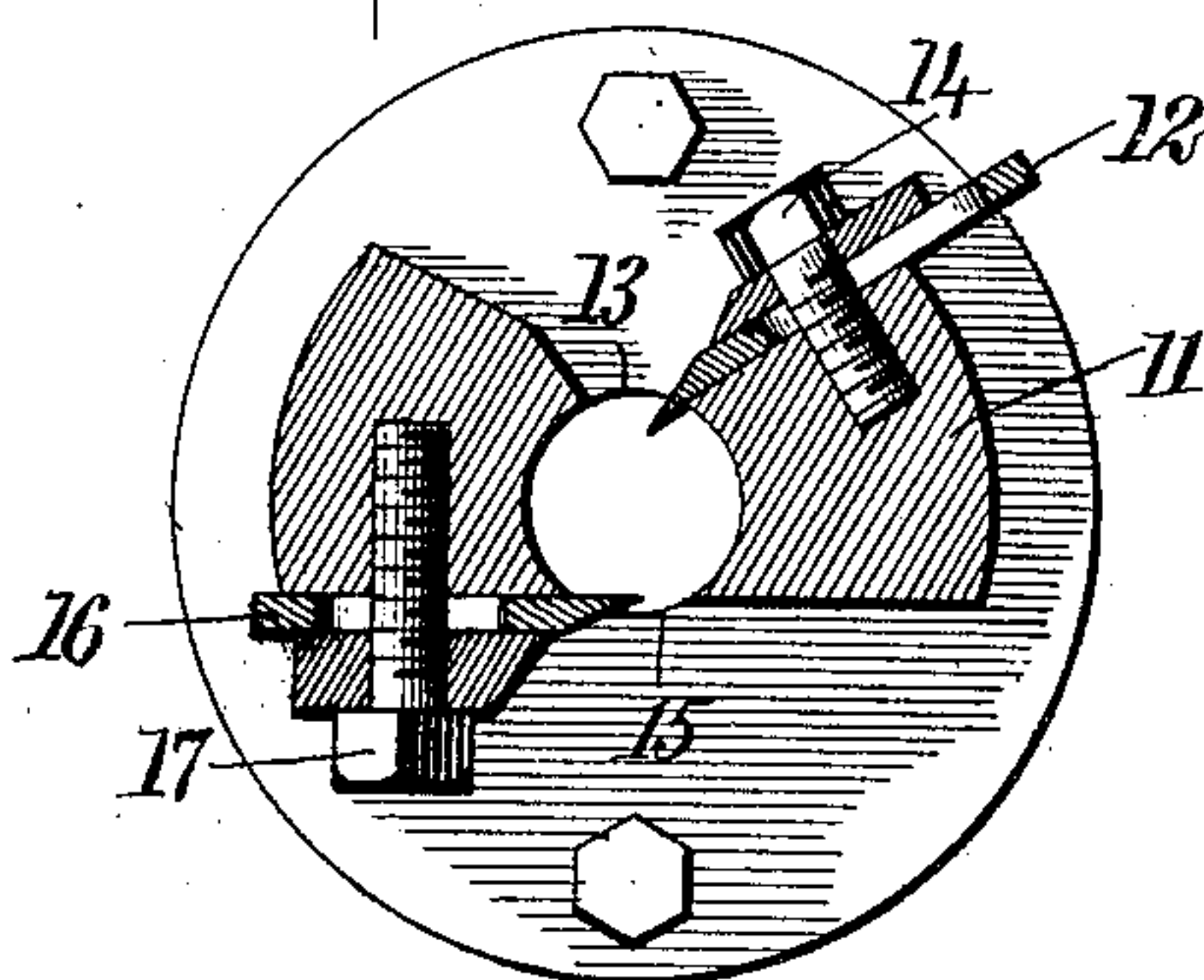


Fig. 3.



Fig. 4.



WITNESSES:  
*H. G. Dietrich*  
*A. E. Fay*

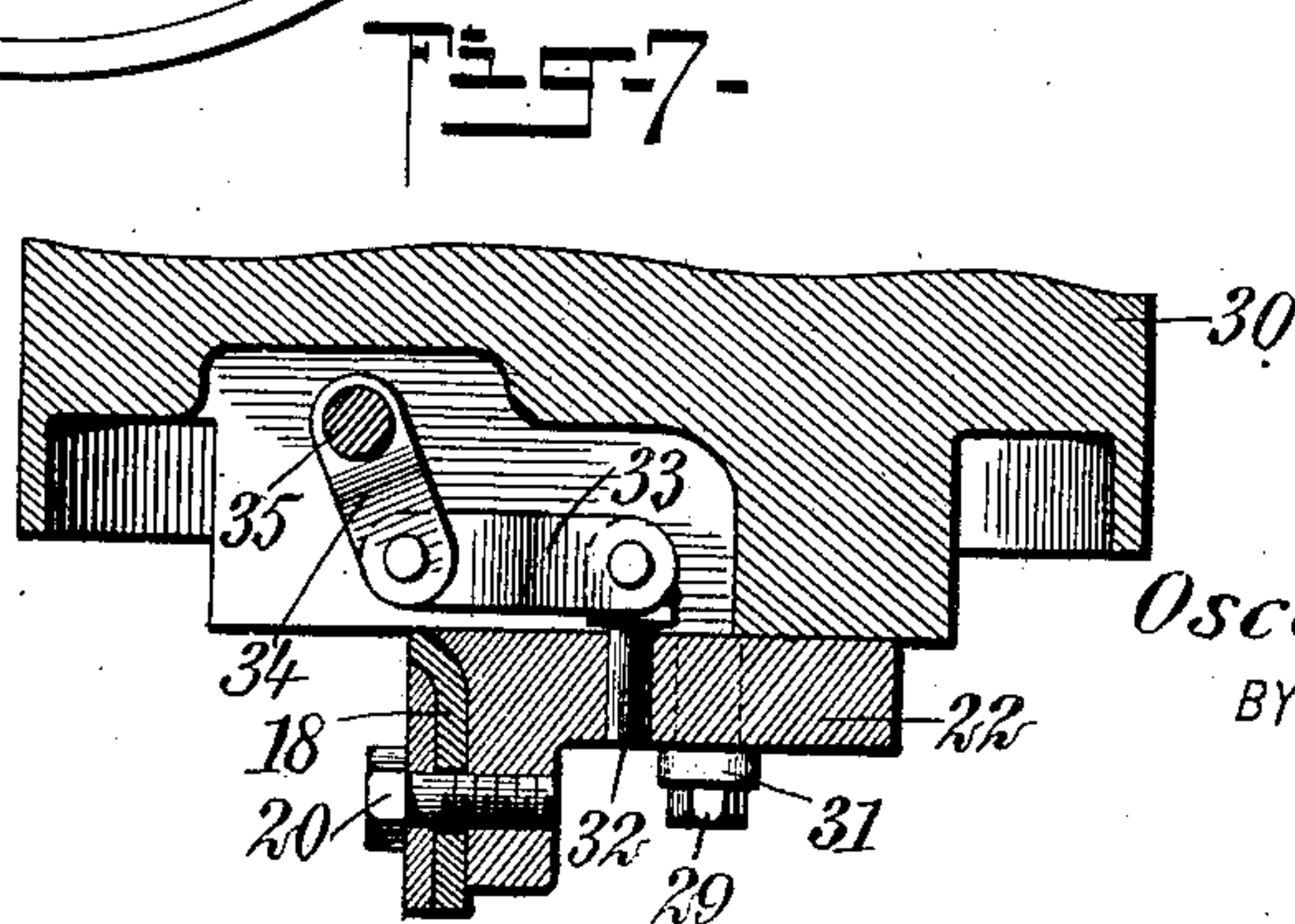
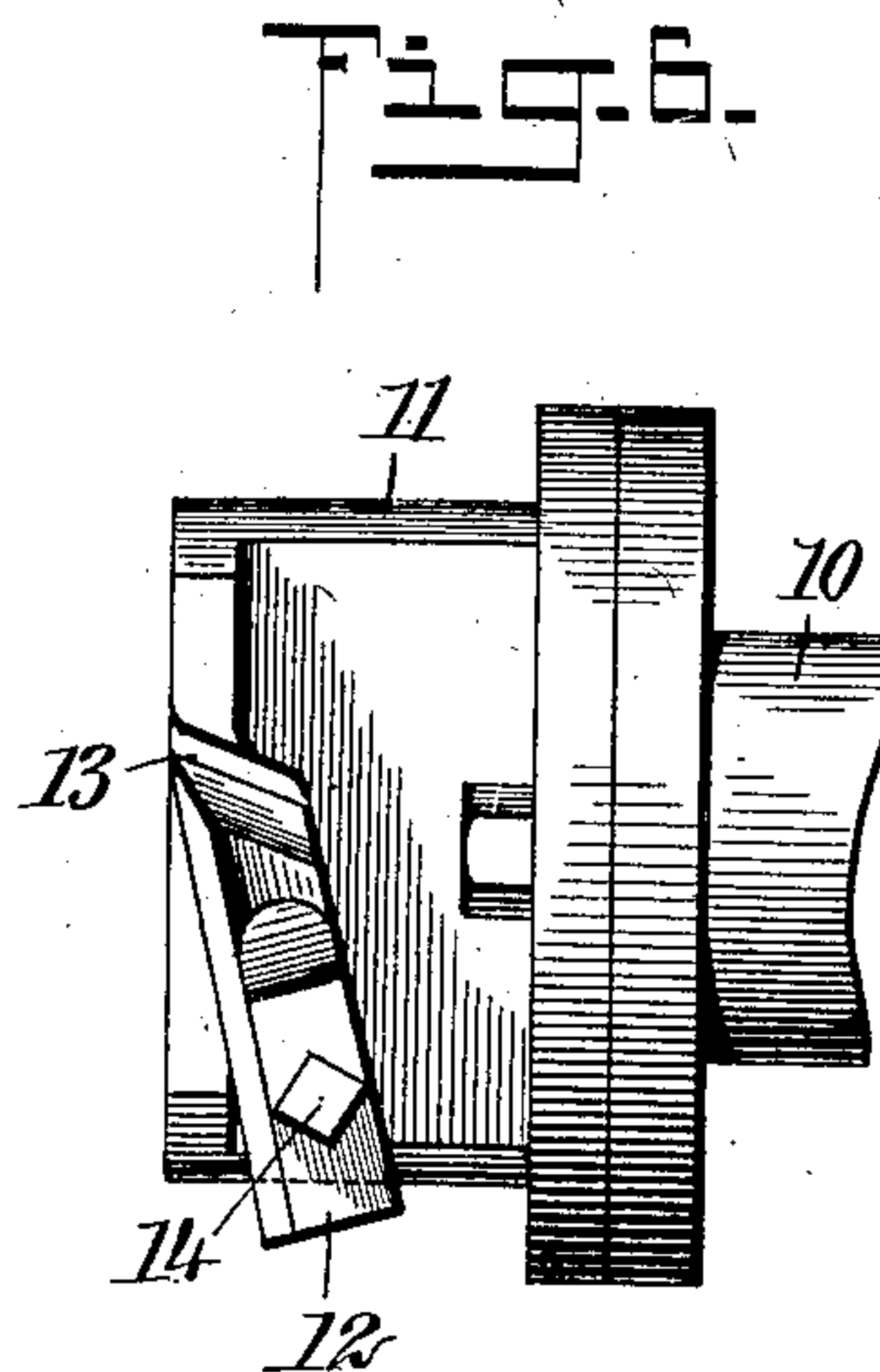
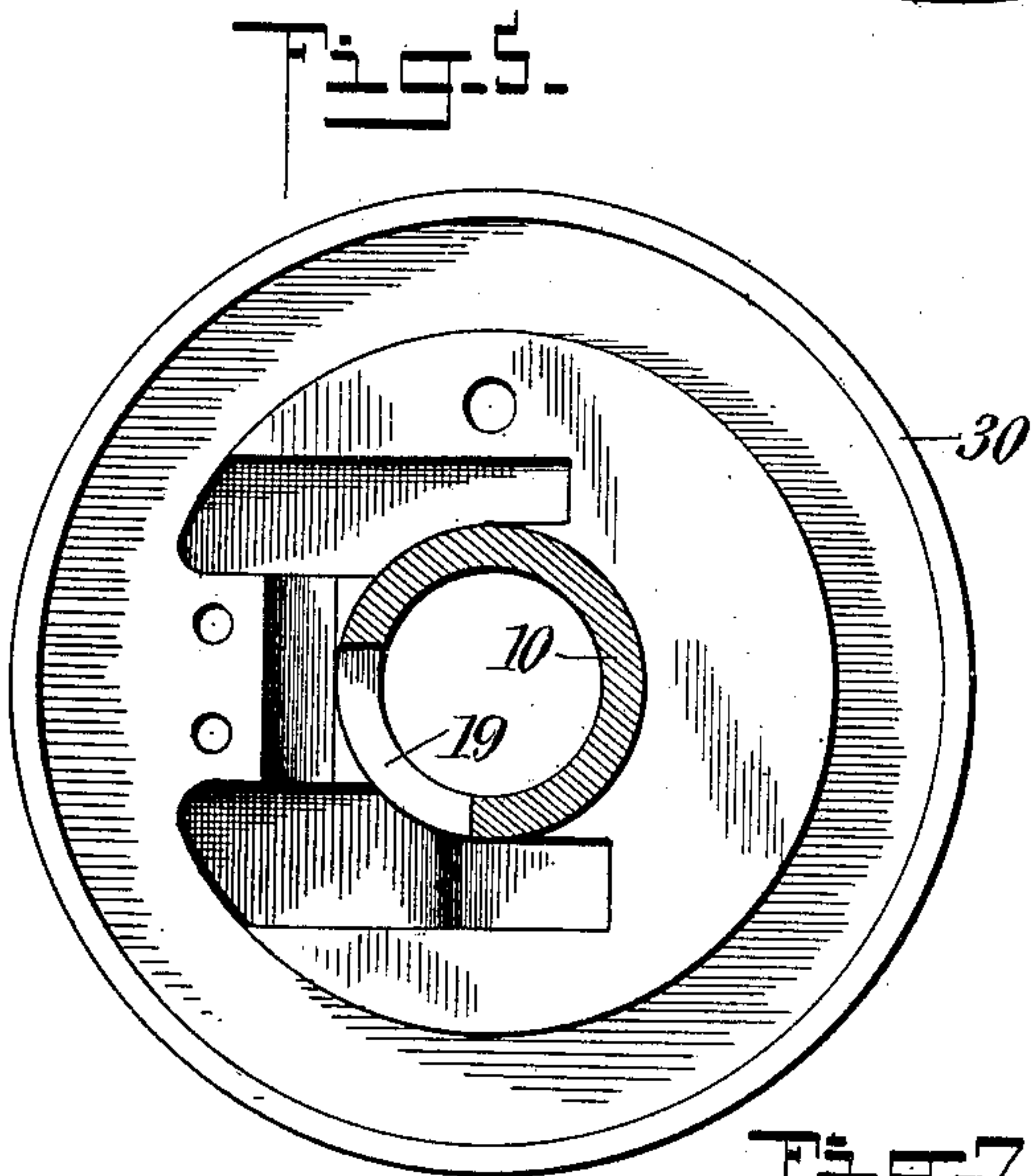
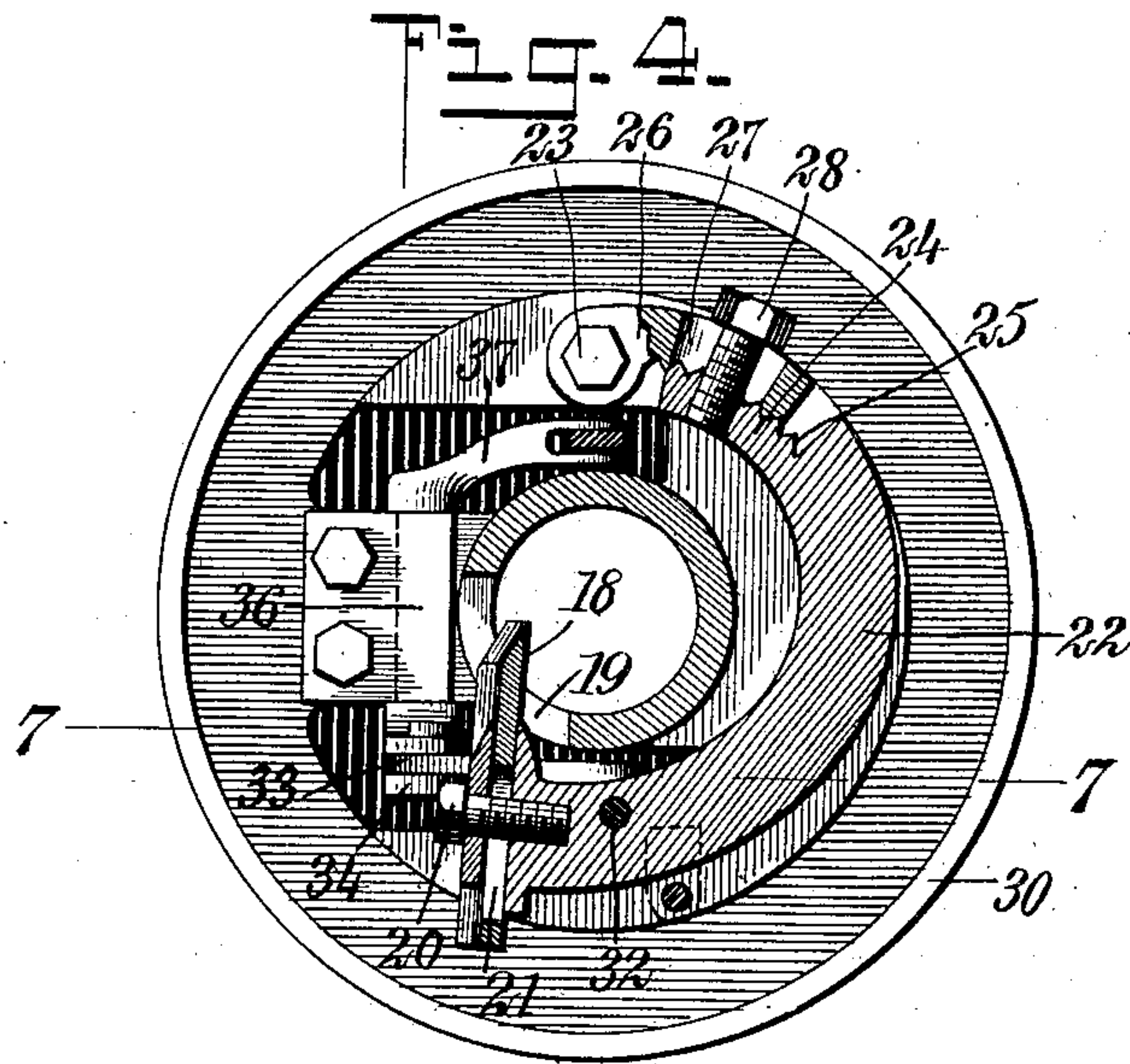
INVENTOR  
*Oscar W. Stith*  
BY *Mumma & Co.*  
ATTORNEYS

No. 891,111.

PATENTED JUNE 16, 1908.

O. W. STITH.  
HANDLE LATHE HEAD.  
APPLICATION FILED JAN. 30, 1908.

2 SHEETS—SHEET 2.



WITNESSES:  
*H. S. Dietrich*  
*A. E. Fay*

INVENTOR  
*Oscar W. Stith*  
BY *Mum & Co*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

OSCAR W. STITH, OF ADA, OHIO.

## HANDLE-LATHE HEAD.

No. 891,111.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed January 30, 1906. Serial No. 298,640.

*To all whom it may concern:*

Be it known that I, OSCAR W. STITH, a citizen of the United States, and a resident of Ada, in the county of Hardin and State of Ohio, have invented a new and Improved Handle-Lathe Head, of which the following is a full, clear, and exact description.

My invention relates to certain features of a lathe especially designed for use in the manufacture of handles, but capable of use for turning up irregular bodies of various kinds.

The principal objects of the invention are to provide means whereby the finishing bit or cutter is allowed to have a natural drop so as to work with the grain of the timber without gouging the same, and to prevent the tearing out of the grain of the material operated upon; also to provide the scoring head with both a roughing bit and a reducing bit, the first to knock off the corners of the square blanks which are fed into the machine, and the second to take the material thus rounded and reduce it to the largest diameter of the handle to be turned; and also to provide a sliding collar for use in controlling the operation of the finishing bit with means whereby it is better suited to receive the end thrusts of the square blank fed to the machine, and whereby it is permitted to take up wear, thus giving a rigid yet speedy and free control to the finishing bit.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a portion of a handle lathe constructed in accordance with the principle of my invention; Fig. 2 is a side elevation of the same partly broken away to show the interior parts in section on a central plane; Fig. 3 is a sectional view on the broken line 3—3 of Fig. 2; Fig. 4 is a sectional view on the broken line 4—4 of Fig. 2; Fig. 5 is an end view of the driven pulley showing the spindle in section; Fig. 6 is an elevation of the end of the device showing the scoring head taken at right angles to Fig. 2, Fig. 7 is a sectional view on the line 7—7 of Fig. 4, and Fig. 8 is a detail perspective view showing part of the curved arm and the means for adjusting the same.

The parts of the lathe which are illustrated are intended to be operated with any ordinary kind of feeding device, which has not

been shown, and to be connected with other parts of the lathe as desired. The main body of this portion of the lathe is illustrated as usual in the form of a hollow spindle 10, at one end of which is mounted in fixed position with respect to the spindle a scoring head 11. This scoring head is also hollow, and it is intended that a square blank *a* shall be fed into the scoring head, reduced first to a round shape by knocking off the corners, and then reduced to the largest size of the article to be produced, in the scoring head, and then fed through the hollow spindle where it is finished to the proper shape. In order to accomplish these results the scoring head is provided with an adjustable roughing bit 12 fixed in the outer rim thereof and projecting through a notch 13 into the interior of the head. This roughing bit is preferably round-ed or of gouge shape and is intended to knock off the corners and reduce the square blank roughly to a round form. It is held in position by a bolt 14 or in any desired manner. At a point at a distance from the rim of the scoring head is a perforation 15 through which projects a reducing bit 16. This bit like the roughing bit is mounted at a proper angle to project into the passage through the head and is adjusted by means of a bolt 17, so as to reduce the blank to the maximum diameter of the article to be turned in the lathe. The blank is then fed along in the spindle and is finished by a finishing bit 18 which projects through a perforation 19 in the spindle. It is customary to finish tool handles by a bit projecting through the spindle and adjust the same in such a manner that it gouges into the grain of the wood and tears the latter at times. In order to avoid this and to provide for a cleaner cut I have adjustably mounted this tool by means of a bolt 20 passing through a slot 21 in the tool on a curved arm 22. This arm is pivoted on a bolt 23 on the hub of the pulley 30 at the side of the spindle which is nearly opposite the perforation 19, the pivotal point being preferably substantially in the plane of the bit itself so that the cutting edge of the bit always points substantially to the pivot upon which it swings, the outer end of the bit extending past the center of the handle. For the purpose of rendering the arm adjustable I have provided it with a projection 24 having teeth 25, and on the pivot 23 I have located a plate 26 having teeth for engaging the teeth 25 and having a slot 27. A bolt 28



passes through this slot into the projection 24; the arm can therefore be adjusted by loosening the bolt, relocating the two sets of teeth with respect to each other, and fixing the parts in their adjusted positions by tightening the bolt. To guide the arm and prevent it from swinging outwardly beyond a certain position I have placed a stud 29 on the hub of a driven pulley 30 on which the pivot 23 is mounted, and on this stud is located a guide plate 31.

In order to provide for the necessary adjustments of the finishing bit the arm 22 has a pin 32 pivotally connected with a link 33, which in turn is pivoted to an arm 34 on a shaft 35. This shaft extends through a bearing plate 36, and on its outer end is provided with a rigid arm 37. With this arm is pivotally connected a link 38 which is pivoted to a collar 39 slidingly mounted on the spindle. The spindle is provided with a key 40 for transmitting its rotations to the collar.

In order that all wear from lost motion may be taken up and the working parts remain perfectly rigid at all times and yet permit free rotation, I have provided the collar with a flange 41, on which turn two rings 42, the rings and flange being cupped to provide for ball bearings 43. These rings constitute a frame with which a controlling lever 44 is pivotally connected. This lever is provided with an eye 45 adapted to be connected with a yoke (not shown) which is fastened to the pattern on the lathe which is used for controlling the shape of the article being turned up.

It will be seen that the ball bearing sliding collar is better suited to receive the end thrusts of the square blank fed through the machine, and that it gives a rigid yet speedy

and free control to the finishing bit, all wear and lost motion being taken up.

The handle square to be turned into a handle may be fed by any power-driven feeding device, as for example, one similar to those used in ordinary handle lathes or dowel machines.

Having thus described my invention, I claim:

1. A handle lathe comprising a hollow spindle, a curved arm arranged substantially concentric with the spindle, a finishing bit on said arm, and means for moving said arm, comprising a crank shaft journaled transversely on the spindle, a link connecting said arm with one of the arms of the crank shaft, a sliding collar mounted on the spindle, a link connecting the said collar with the other arm of the crank shaft, rings on each side of the collar, and a lever pivoted to the rings.

2. A lathe having a hollow spindle provided with a perforation, a pivoted plate located adjacent to said spindle and opposite a portion of said perforation, said plate having teeth on one side thereof, an arm having a projection provided with teeth adapted to engage the teeth on said plate, means for adjustably securing said arm and plate together, and a bit adjustably mounted on said arm and adapted to project through said perforation.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR W. STITH

Witnesses:

I. B. STITH,  
WILLIAM LANTZ.