

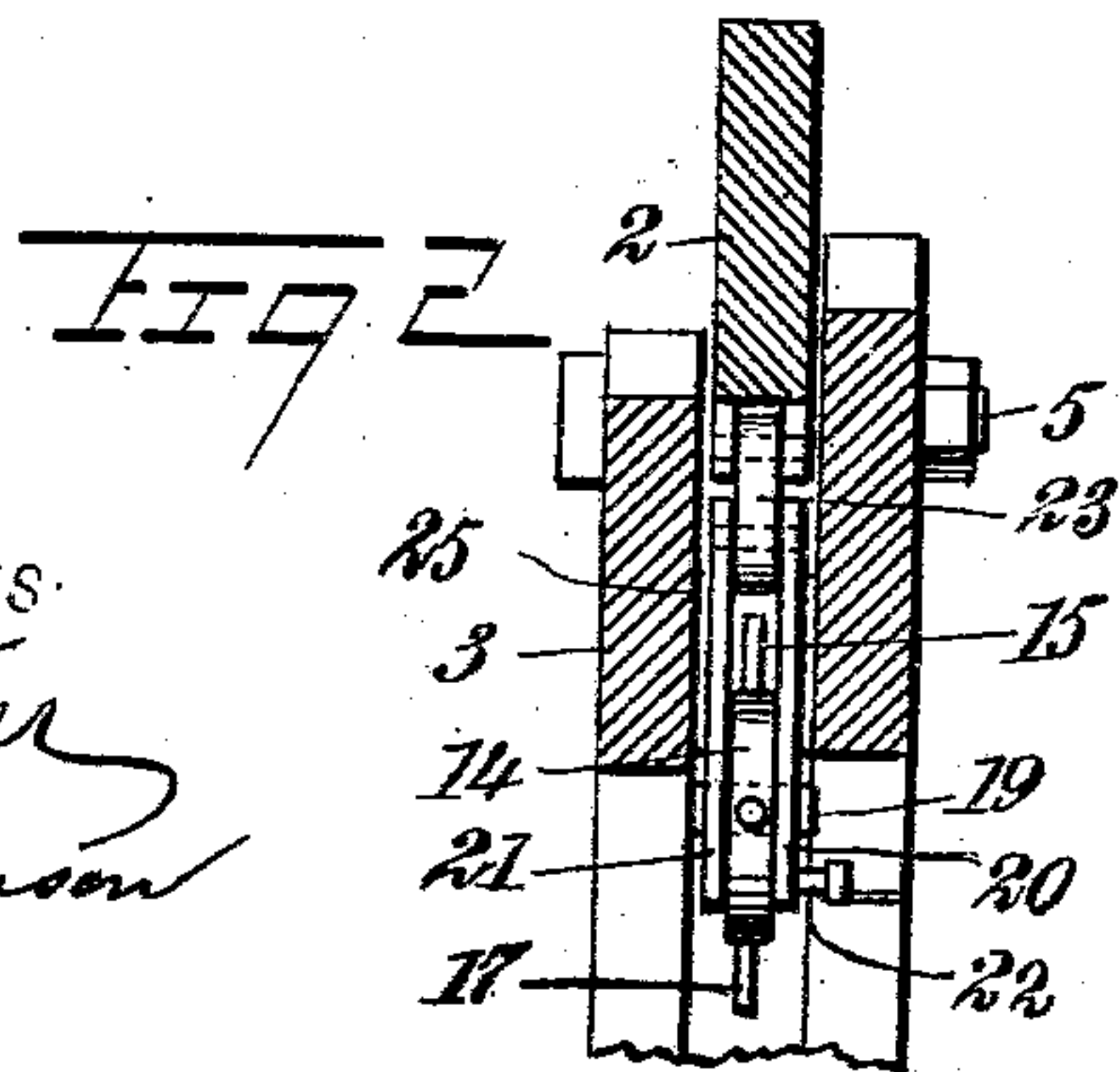
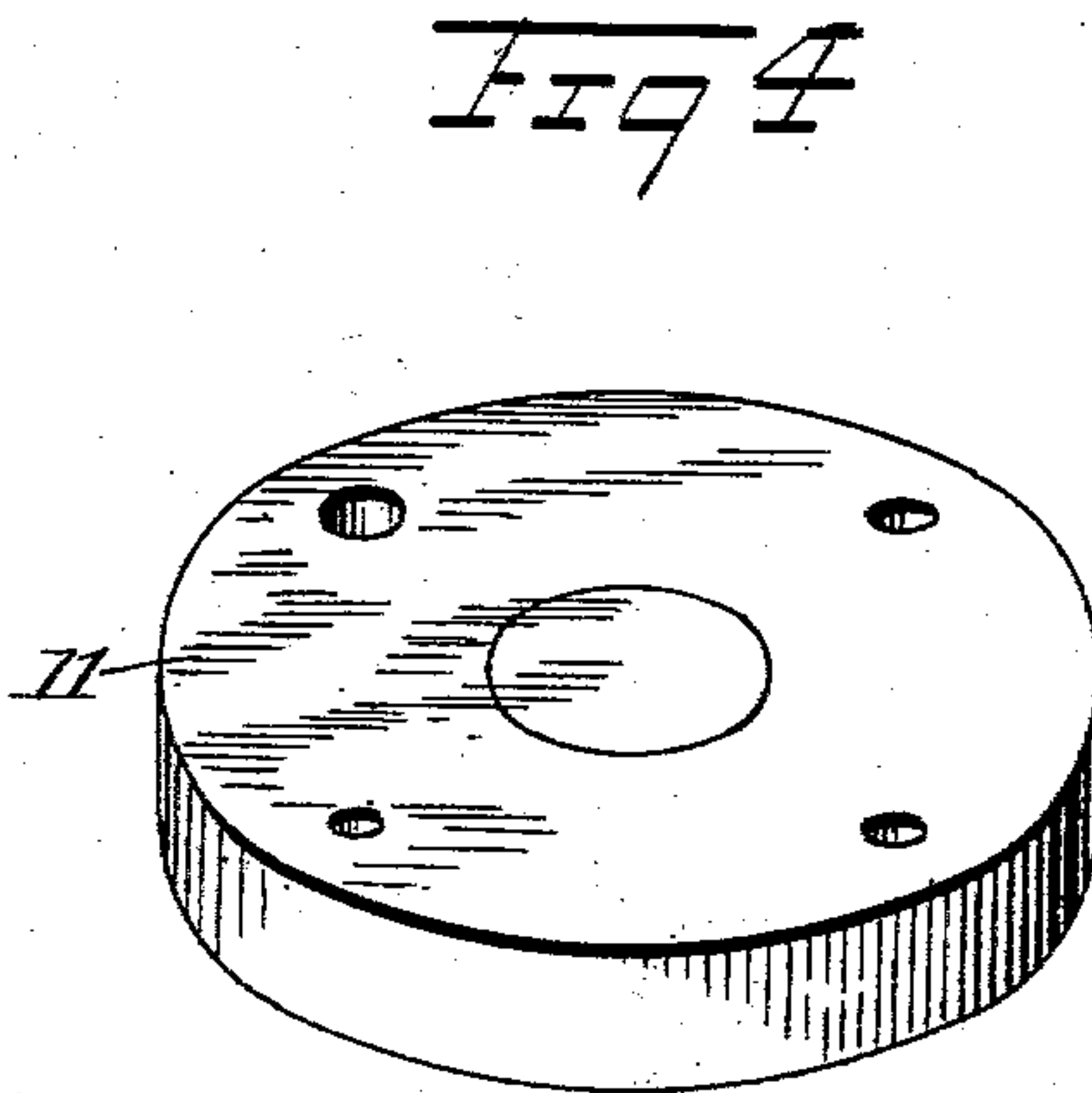
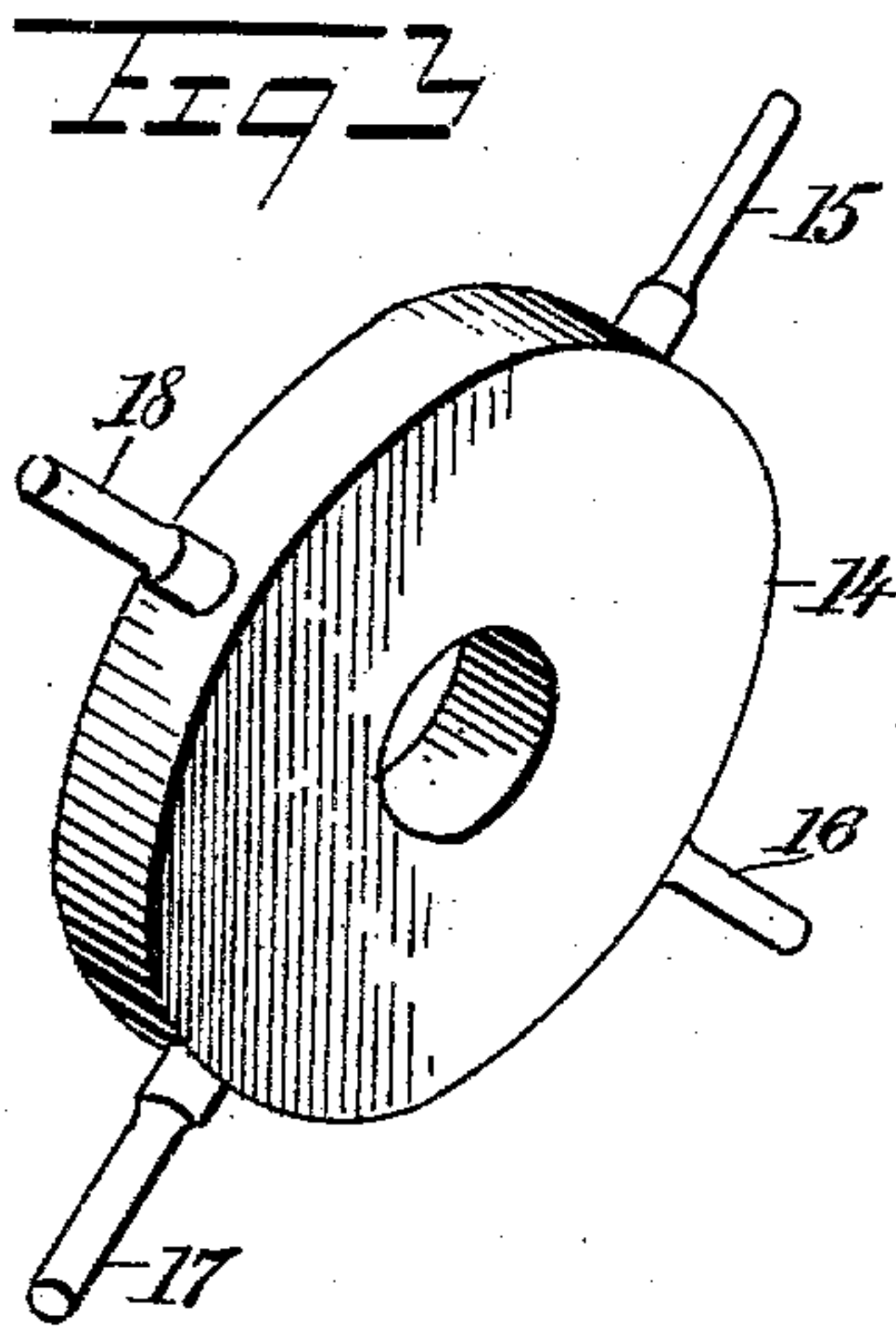
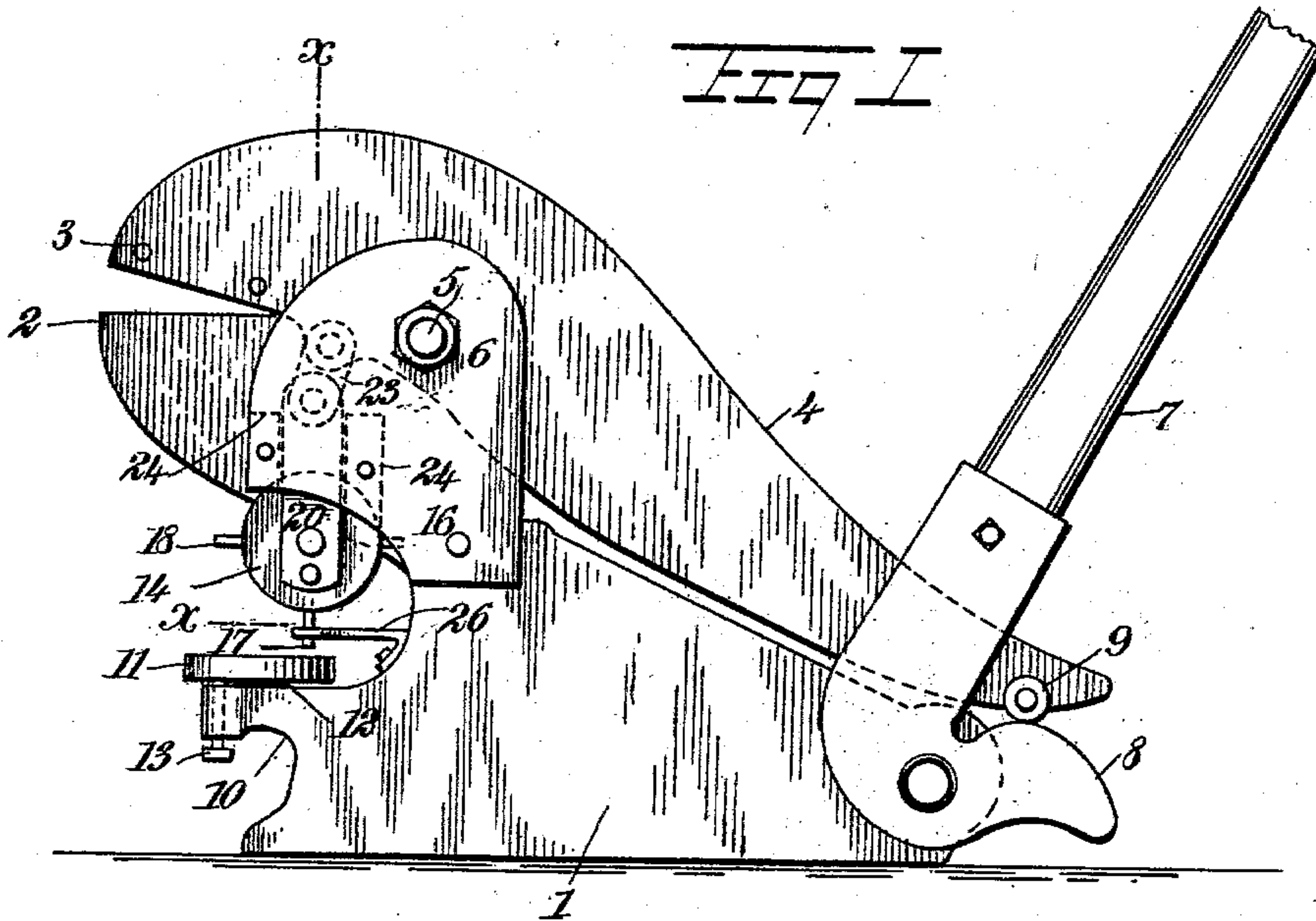
No. 745,628.

PATENTED DEC. 1, 1903.

A. A. KOCH.  
PUNCHING AND SHEARING MACHINE.

APPLICATION FILED FEB. 27, 1903.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ARTHUR ALFRED KOCH, OF MONTEZUMA, IOWA.

## PUNCHING AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 745,628, dated December 1, 1903.

Application filed February 27, 1903. Serial No. 145,327. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR ALFRED KOCH, a citizen of the United States, and a resident of Montezuma, in the county of Poweshiek and State of Iowa, have invented a new and Improved Punching and Shearing Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in punching and shearing machines, the object being to provide a machine of this character designed to be operated manually and in which changes for different-sized holes may be quickly made.

I will describe a punching and shearing machine embodying my invention and then point out the novel features in the appended claims.

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 side elevation of a punching and shearing machine embodying my invention. Fig. 2 is a section on the line  $x x$  of Fig. 1. Fig. 3 is a perspective view of the punch-carrier, and Fig. 4 is a perspective view of the punch-die.

Referring to the drawings, 1 designates the base of the machine, on which is a fixed shearing-jaw 2, coacting with a shearing-jaw 3, formed on a rearwardly-extended lever 4, this lever being fulcrumed on a bolt 5, mounted in a casting 6, secured to the base 1. An operating-lever 7 is pivoted to the rear end of the base 1 and has a rearward cam-shaped projection 8 for engaging with an antifriction-roller 9, mounted on the end of the lever 4. With this arrangement of the levers the operator by drawing the lever 7 forward will operate the shears or the punch, as will be hereinafter described, while standing in front of the machine holding the work.

Removably arranged in a forward projection 10 of the base is a punch-die consisting of a disk 11, having different-sized holes for different punchings. This disk on its under side has a hub portion 12 for engaging in an opening in the projection 10, and the disk may be locked in its adjusted position by

means of a screw 13 engaging in a tapped hole in said projection 10 and impinging against the disk or engaging in a hole therein.

The punch-carrier consists of a disk 14, from which several punches 15, 16, 17, and 18 extend radially, these punches of course being of different sizes. The carrier is mounted to rotate on a pin 19, removably engaged with links 20 21, that pass down at opposite sides of the carrier, and the carrier may be held as adjusted by means of a screw 22. The links 20 21 are connected to the lever 4 by means of a short link 23, and the links 20 21 are guided in their vertical movements by guide-plates 24, secured to the inner side of the casting 6, and guide-plates 25 are attached to the inner side of the fixed jaw 2. Attached to the base is an arm 26, having a forked end through which the operating-punch passes and is guided.

It is obvious that in a machine embodying my invention the change for different-sized punchings may be quickly made and different sets of punch-dies may be provided, and different sets of punch-carriers may also be provided.

The operation of the machine is quite obvious without further description.

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

1. A punching and shearing machine comprising a base, a fixed jaw on the base, a lever, a jaw carried by the lever, a punch operated by the lever, an operating-lever pivoted to the base and having a rearwardly-extended cam-shaped extension, and a roller on the first-named lever with which said extension engages, whereby the movable jaw may be moved in operative direction by the movement of the free end of the operating-lever toward the jaw.

2. A punching and shearing machine, comprising a base, a fixed shearing-jaw on the base, a lever mounted to swing relatively to the base and carrying the shearing-jaw, an operating-lever for the first-named lever, a punch-carrier, link connections between the punch-carrier and the first-named lever, a plurality of punches on said carrier, a guide

in which the operating-punch moves and a punch-die mounted to rotate on the base and having a plurality of holes of different sizes.

3. In a punching and shearing machine, a  
5 base, a lever mounted to swing thereon, links having connection with the lever, a disk mounted to rotate between said links, punches of different sizes extended radially from said disk, a screw operating in one of the links for  
10 locking the disk as adjusted, a disk mounted to rotate on the base and having a plurality

of holes into which the punches are designed to pass, and a screw for locking said disk in adjusted position, the said screw engaging with a disk at one side of its center.

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

ARTHUR ALFRED KOCH.

Witnesses:

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