

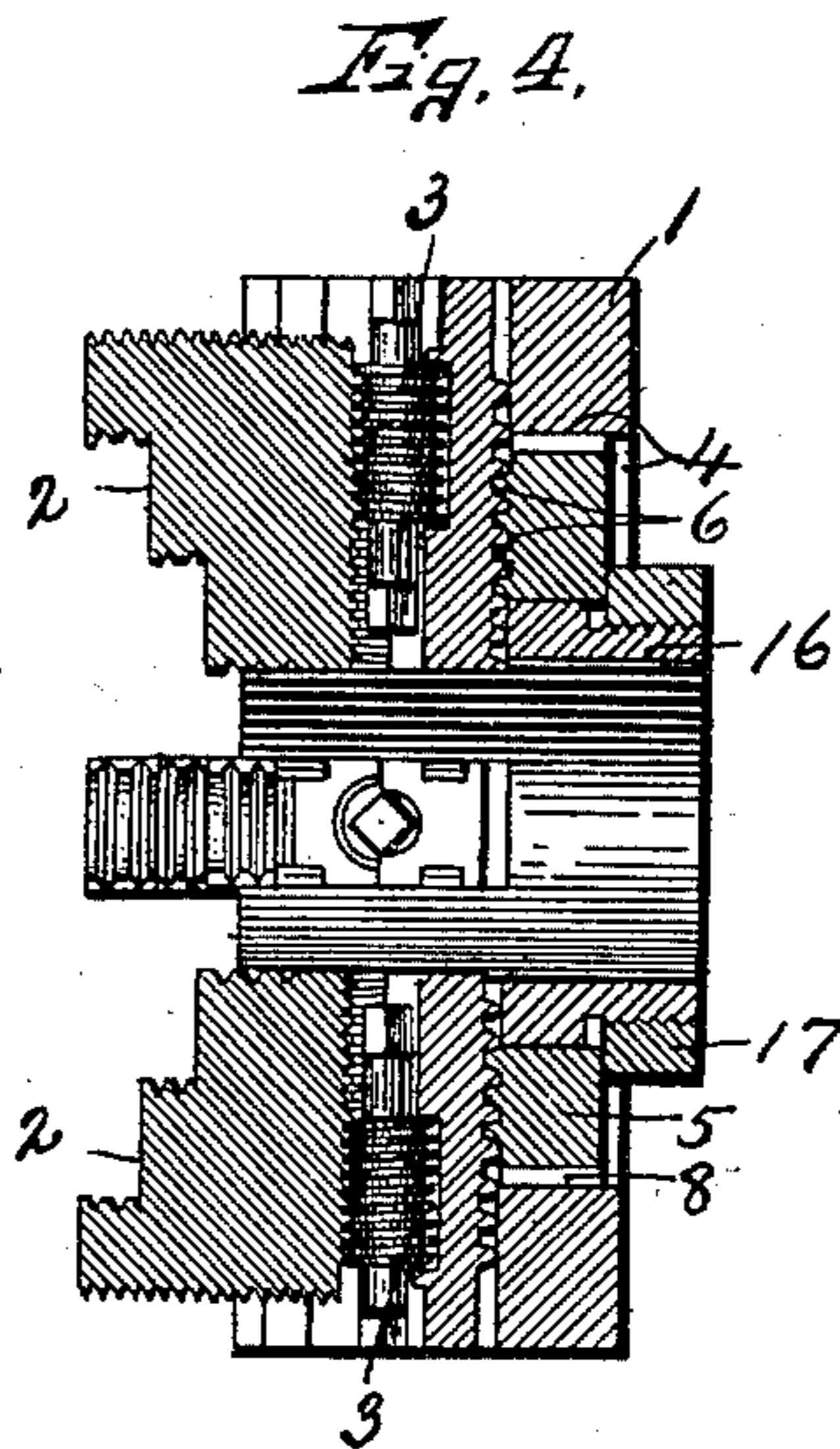
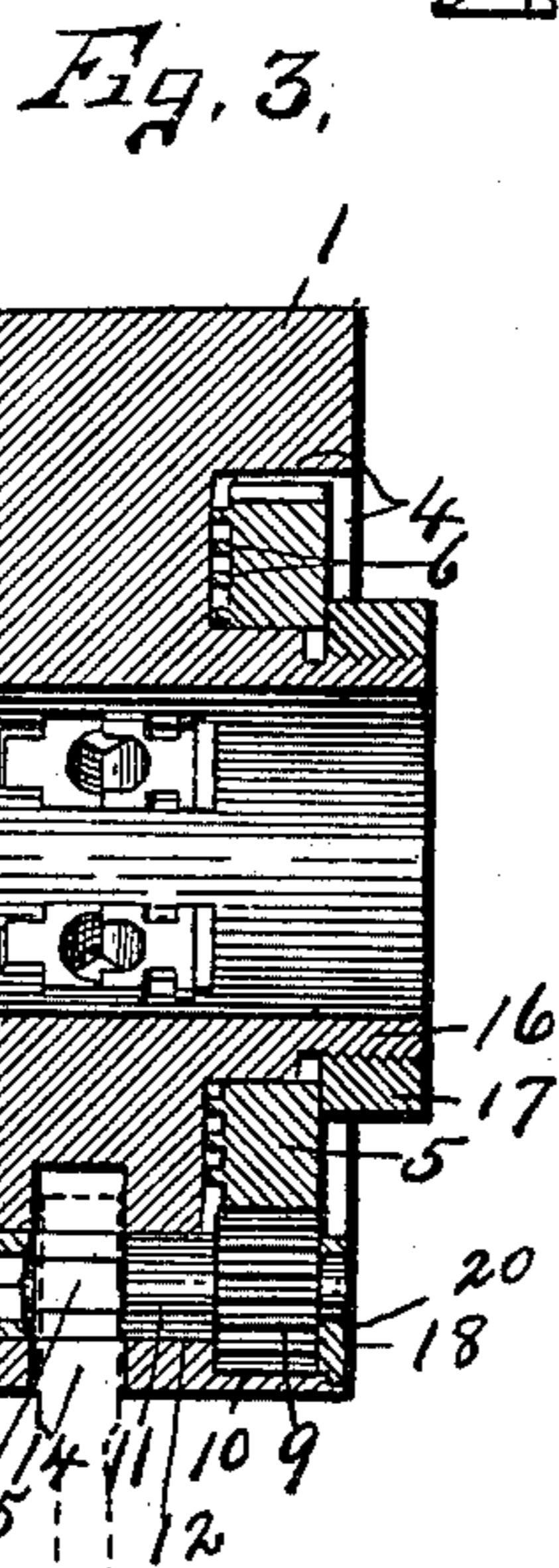
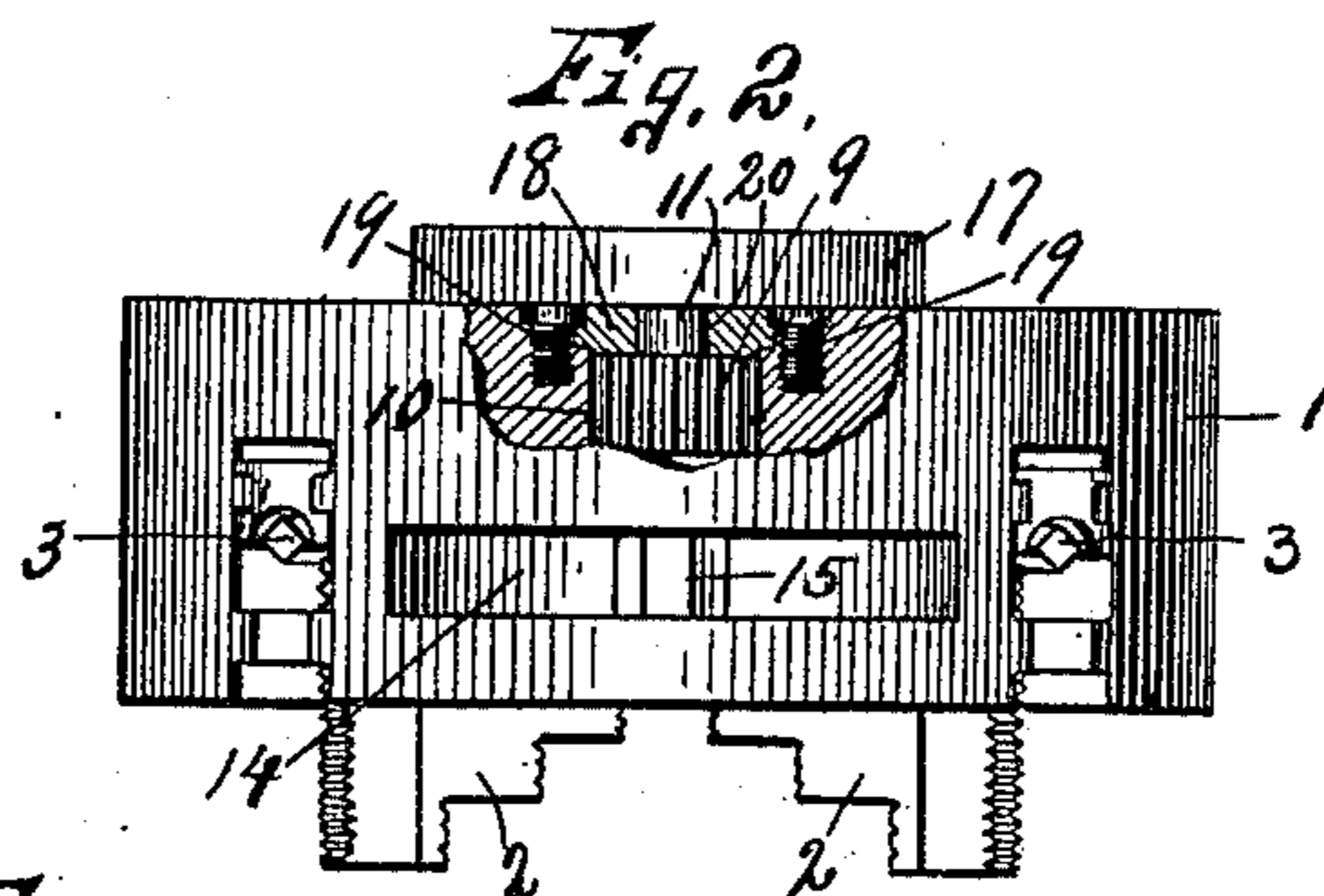
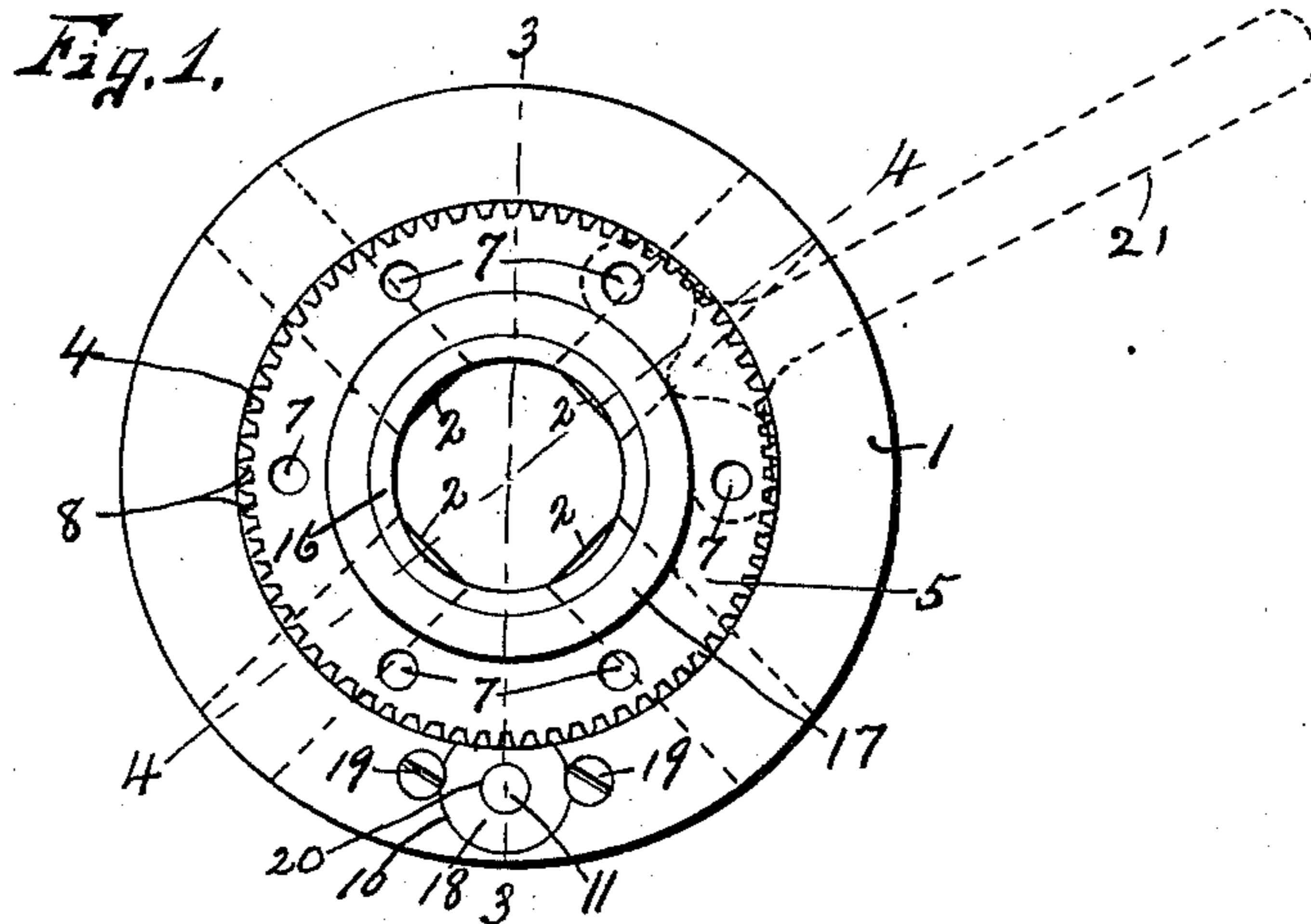
No. 685,890.

Patented Nov. 5, 1901.

J. H. WESTCOTT.
LATHE CHUCK.

(Application filed July 12, 1901.)

(No Model.)



WITNESSES:
J. H. Arthur
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UNITED STATES PATENT OFFICE.

JAMES H. WESTCOTT, OF ONEIDA, NEW YORK, ASSIGNOR OF ONE-HALF TO WESTCOTT CHUCK COMPANY, OF ONEIDA, NEW YORK, A CORPORATION OF NEW YORK.

LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 685,890, dated November 5, 1901.

Application filed July 12, 1901. Serial No. 67,957. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WESTCOTT, of Oneida, in the county of Madison, in the State of New York, have invented new and useful
5 Improvements in Lathe-Chucks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in
10 lathe-chucks in which a plurality of jaws are movable either simultaneously or independently in substantially radial lines toward and away from the center of the head.

The object of my invention is to provide
15 means whereby these jaws may be speedily moved simultaneously in either direction while the head is still on the mandrel or shaft or in operative position.

A further object is to provide a suitable
20 mechanism connected to said means whereby the jaws may be moved in either direction while the chuck is in operative position at a slow rate of speed, or, in other words, whereby increased power is applied to grip the jaws
25 upon the work. I am aware that a circular rack and pinion have been employed for the purpose of operating the jaws; but I believe myself to be the first to so arrange the pinion and circular rack that a suitable wrench
30 or equivalent device may be applied to the larger gear while the chuck is in its operative position for rotating said larger gear having the scroll thereon, and thereby moving the jaws more rapidly toward and away from each
35 other than would be possible by operating a circular rack by means of the pinion. It will be observed that this feature of my invention is particularly important owing to the fact that when the jaws are in either of their
40 extreme positions and it is desired to move the same to the other extreme it is simply necessary for the operator to engage the larger gear with a suitable wrench or crank and to rotate the same, thereby moving the
45 jaws from one extreme to the other with but very little loss of time. Furthermore, when the jaws are thus moved approximately to the desired position and it becomes necessary

to grip the work very tightly the operator may then place a suitable wrench or crank 50 upon the pinion meshing with the larger gear, and thereby draw the jaws into engagement with the work with as much force or power as may be desired.

A further object of my invention is to so 55 arrange the spindle of the pinion that a wrench or crank may be readily attached thereto or engaged therewith either from one of the end faces or from the periphery of the head or frame of the chuck. 60

To this end the invention consists in the combination and arrangement of the parts of a lathe-chuck, as hereinafter fully described, and pointed out in the claims.

Referring to the drawings, Figures 1 and 65 2 are respectively an inner face and a top plan view of my improved chuck; and Figs. 3 and 4 are sectional views taken, respectively, on lines 3 3 and 4 4, Fig. 1.

Similar reference characters indicate cor- 70 responding parts in all the views.

In the drawings I have shown a head or frame 1 of a lathe-chuck, in which are mounted radially-movable jaws 2 and suitable screws 3 for moving the gripping-sections of 75 the jaws independently of each other, it being understood that each of these jaws is formed of two sections, one being adapted to grip the work and the other being provided with suitable shoulders for engaging the 80 scroll, the faces of the gripping-section adjacent to the inner section being provided with suitable screw-threads for engaging the screw 3. This screw 3 of each of the jaws is mounted in suitable bearings in the inner section 85 and is prevented from endwise movement relative to the inner section by suitable shoulders formed thereon, and it is thus apparent that the threaded screw locks the two sections together and at the same time permits 90 the gripping-section to be moved relative to the inner section and independently thereof. The construction and operation of the jaws is believed to be well understood, and it is thought to be unnecessary to further illustrate or describe these features of the chuck, 95

it being sufficient to say that each of the jaws is movable in a suitable way formed in the head or frame of the chuck and may be moved simultaneously toward and away from the center of the head by a suitable scroll, hereinafter described.

The essential features of my invention consist in forming the head with an annular recess 4, extending inwardly from the end face of said head opposite to the jaws, and a revoluble scroll-plate 5, mounted in the recess and having its inner face provided with a scroll 6 and its outer face formed with suitable wrench-engaging shoulders, usually consisting of sockets 7, said outer face being exposed through the recess 4 for permitting access to the scroll-plate by a suitable wrench whenever desired. This scroll-plate is provided with peripheral gear-teeth 8, meshing with a pinion 9, which is arranged in an additional recess 10, extending inwardly from the outer end face of the head 1 and communicating with the recess 4. This pinion 9 is secured to a suitable spindle 11, which is journaled in bearings 12, formed in the head or frame 1 and arranged substantially parallel with the axis of the head, said bearings being extended through the front and rear faces of the head, and the inner end of the spindle 9 is formed with a suitable wrench-engaging shoulder, as an angular socket 13.

In order to permit access to the spindle from the periphery of the head or frame 1, I usually provide said head with a peripheral cut-out 14, aligned with the bearings 12 and extending inwardly beyond the same, thereby exposing a portion 15 of the spindle 11, which is usually angular in cross-section for receiving a suitable wrench, a portion of which is shown in dotted lines in Fig. 3.

The frame 1 is formed with a substantially central hub 16 of less diameter than the diameter of the recess 4, the said hub extending through and beyond the recess, and its outer end is preferably threaded for receiving a threaded collar or nut 17, which engages the end faces of the scroll-plate and serves to prevent endwise displacement or disengagement of the scroll with the shoulders of the jaws, said collar being only of sufficient diameter to engage a small portion of the end face of the scroll-plate without concealing the socket 7 or otherwise preventing engagement of a suitable wrench with said sockets. The pinion 9 and its spindle 11 are held in operative position by a suitable cap or plate 18, which is held in position by screws 19, engaged with threaded apertures in the head 1, said plate being formed with a bearing 20, adapted to receive the adjacent end of the spindle 13 for forming an additional bearing therefor.

It is apparent from the foregoing description and the accompanying drawings that when desired to move the jaws rapidly, as

from one extreme position to the other, without loss of time a suitable wrench (indicated by dotted lines in Fig. 1) is applied to the sockets 7 of the scroll or gear plate 5, whereby said gear or scroll plate may be rotated directly, and when the jaws are moved approximately to the desired position the wrench 21 is removed and the gear may then be rotated by the pinion 9 by applying a wrench either to the socket 13 or to the angular portion 15 of the spindle, thereby permitting the operator to apply suitable power to force the gripping-jaws firmly into engagement with the work. When desired to remove the scroll-plate, it is simply necessary to remove or unscrew the collar 17, whereupon said scroll-plate may be readily withdrawn from the recess 4, and when desired to remove the pinion 9 and its spindle the screws 19 are removed, whereupon the plate 18 and pinion 9 may be readily withdrawn through the recess 10.

In the practical operation of my improved chuck it will be observed that by enabling the operator to rotate the larger gear or scroll plate 5 the jaws of the chuck may be speedily moved from one position to the other and that by providing the pinion with wrench-engaging portions in different positions, as seen in Fig. 3, either one or the other of said wrench-engaging portions will be always accessible for the free operation of the wrench or crank applied thereto, it being understood that with certain work it would be inconvenient, if not impossible, to apply a wrench or crank to the socket 13, whereupon a wrench may be readily applied to the angular portion 15, and, on the other hand, it sometimes happens that a wrench could not be conveniently operated upon the portion 15, while a suitable crank might be applied to the socket 13 and freely operated. These features are particularly important in the saving of time and have been devised to meet the necessity observed through a long experience in this class of work.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings.

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

1. A chuck comprising a supporting-frame having an opening extending through its opposite end faces, radially-movable jaws mounted in the frame, a spindle journaled in the opening and having one end provided with a wrench or crank engaging portion, a pinion secured to the spindle and a gear mounted in the frame in mesh with the pinion, and provided with a scroll for actuating the jaws.

2. A chuck comprising a supporting-frame having an opening extending through its opposite end faces, radially-movable jaws mounted in the frame, a spindle journaled in

the opening and having one end provided with
a wrench or crank engaging portion, a pinion
secured to the spindle and a gear mounted in
the frame in mesh with the pinion and having
5 one face provided with a scroll for actuating
the jaws and its other face exposed and formed
with wrench or crank engaging sockets.

In witness whereof I have hereunto set my
hand this 6th day of July, 1901.

JAS. H. WESTCOTT.

Witnesses:

CLARENCE CARSKADDAN,
ROBT. L. MOTT.