

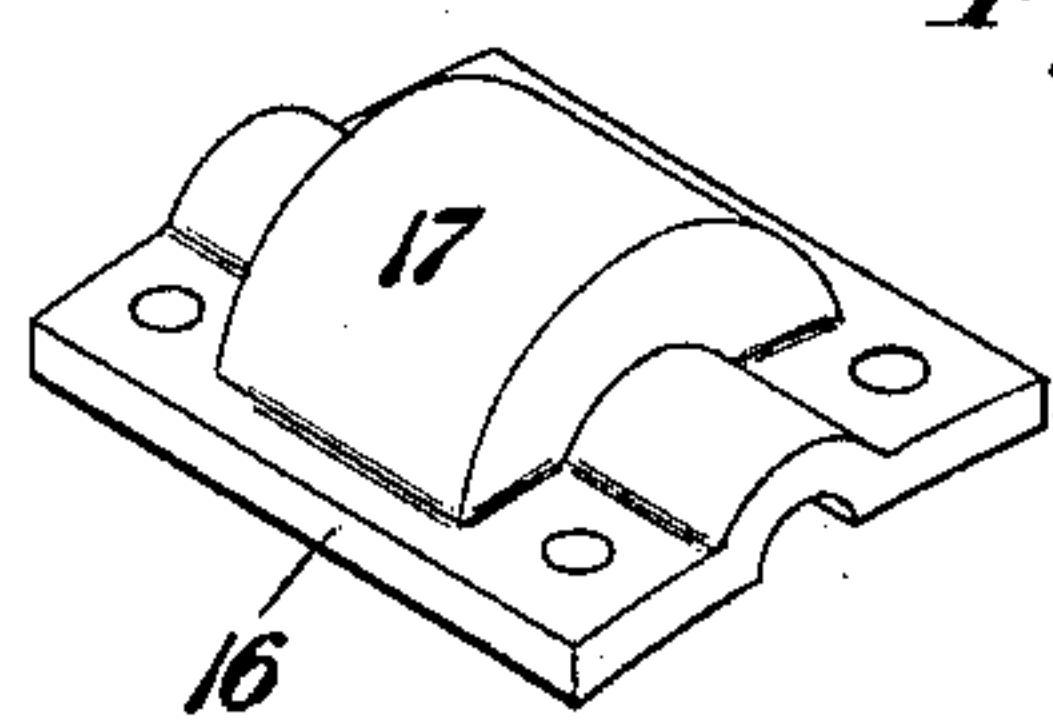
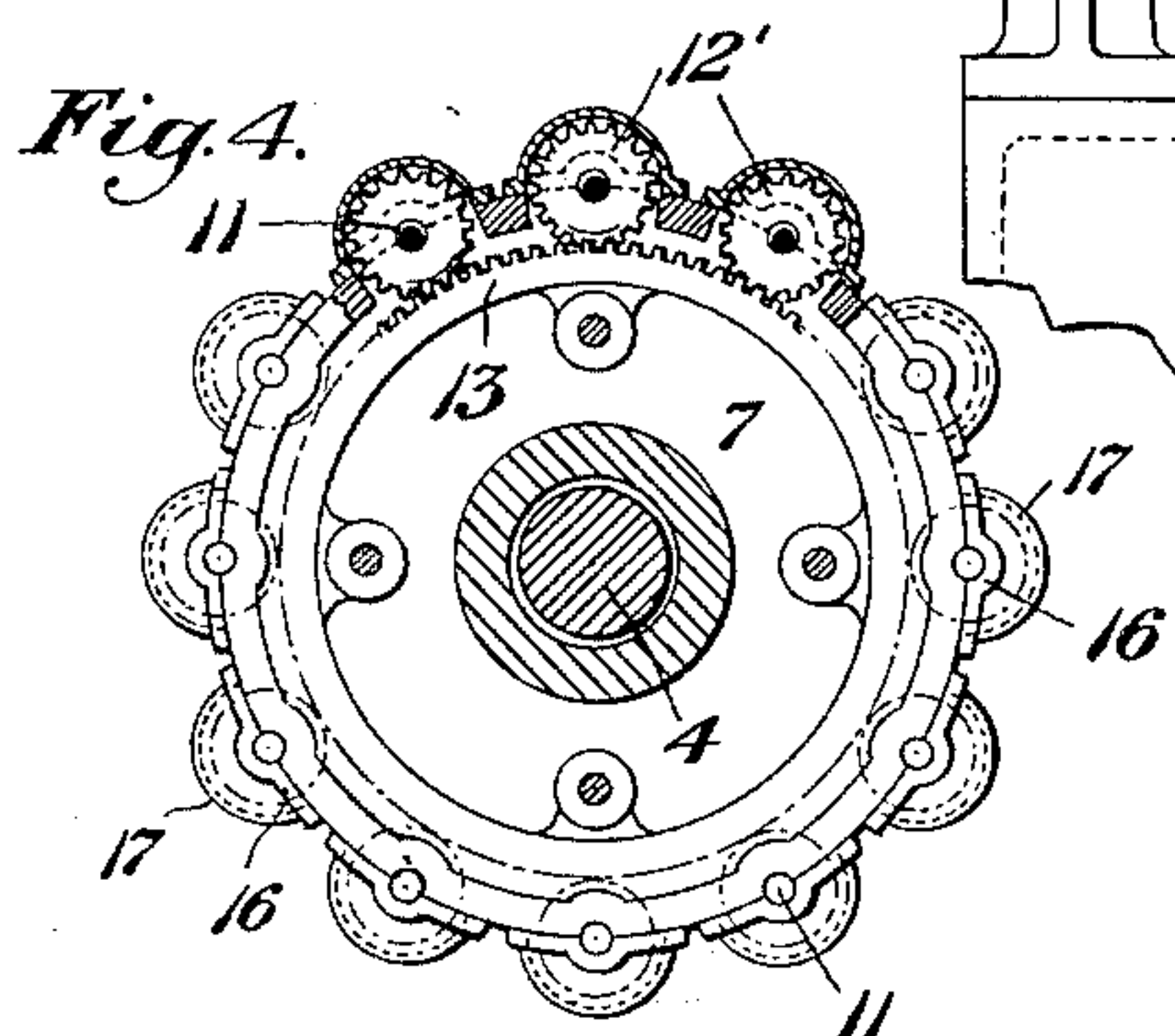
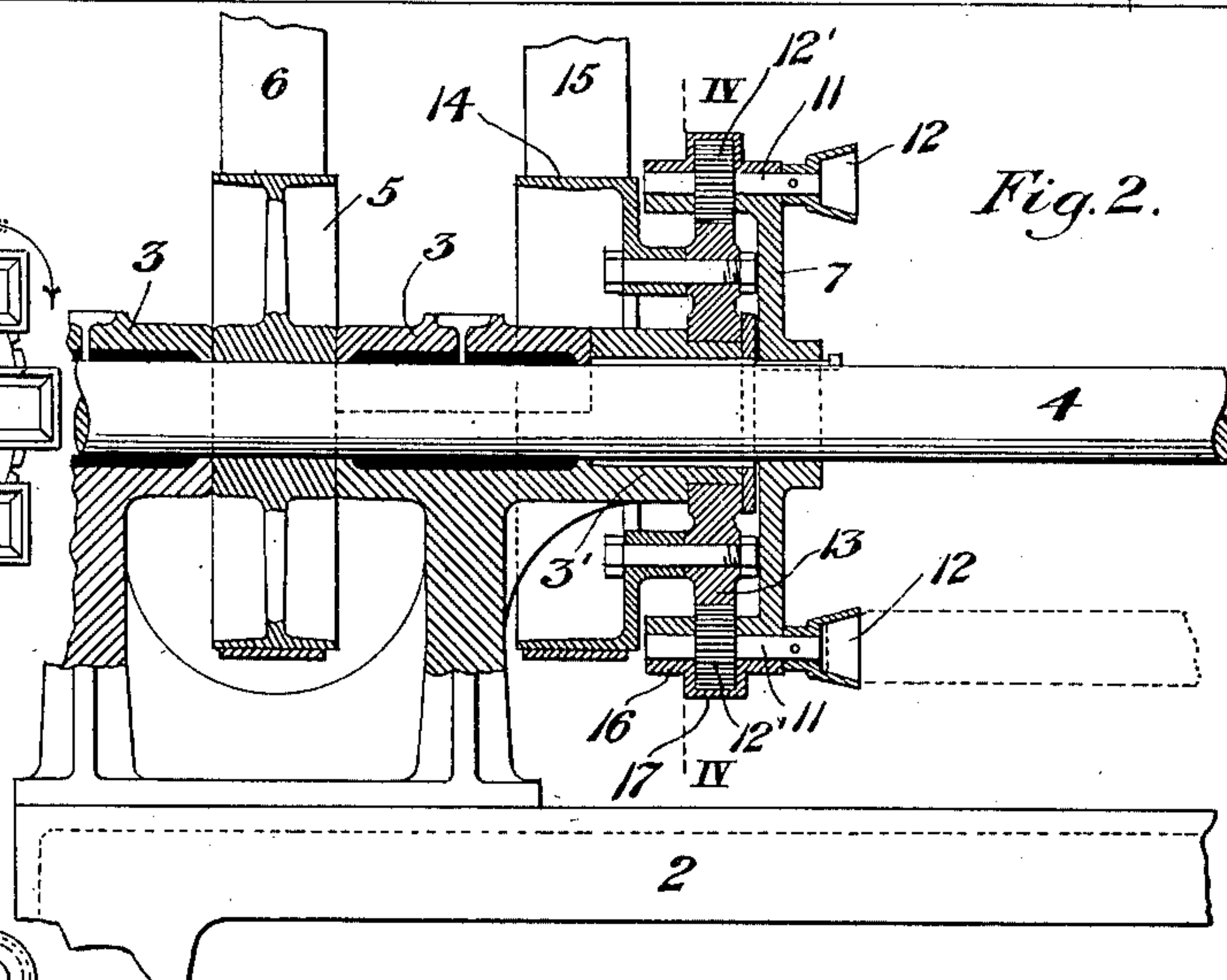
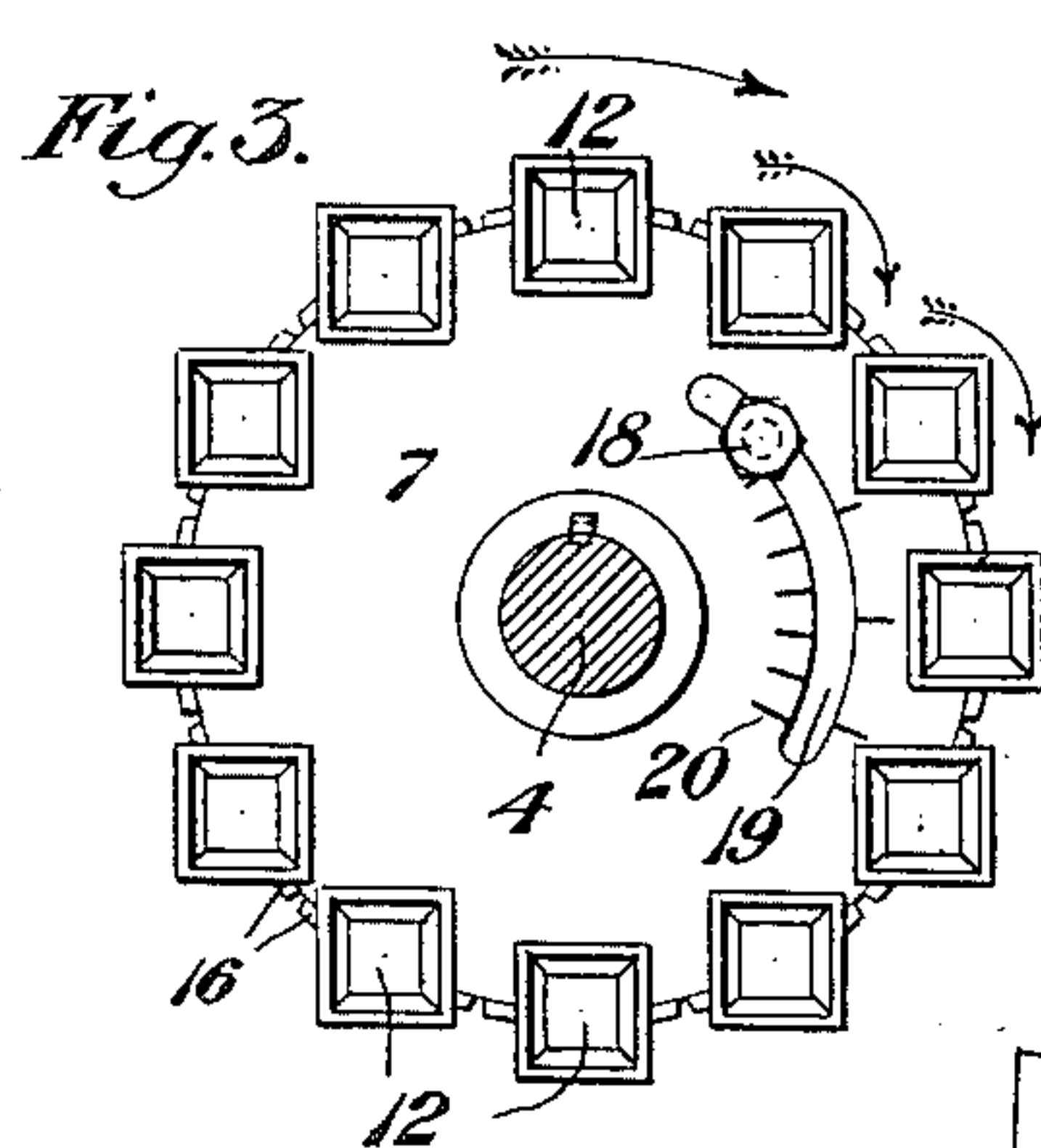
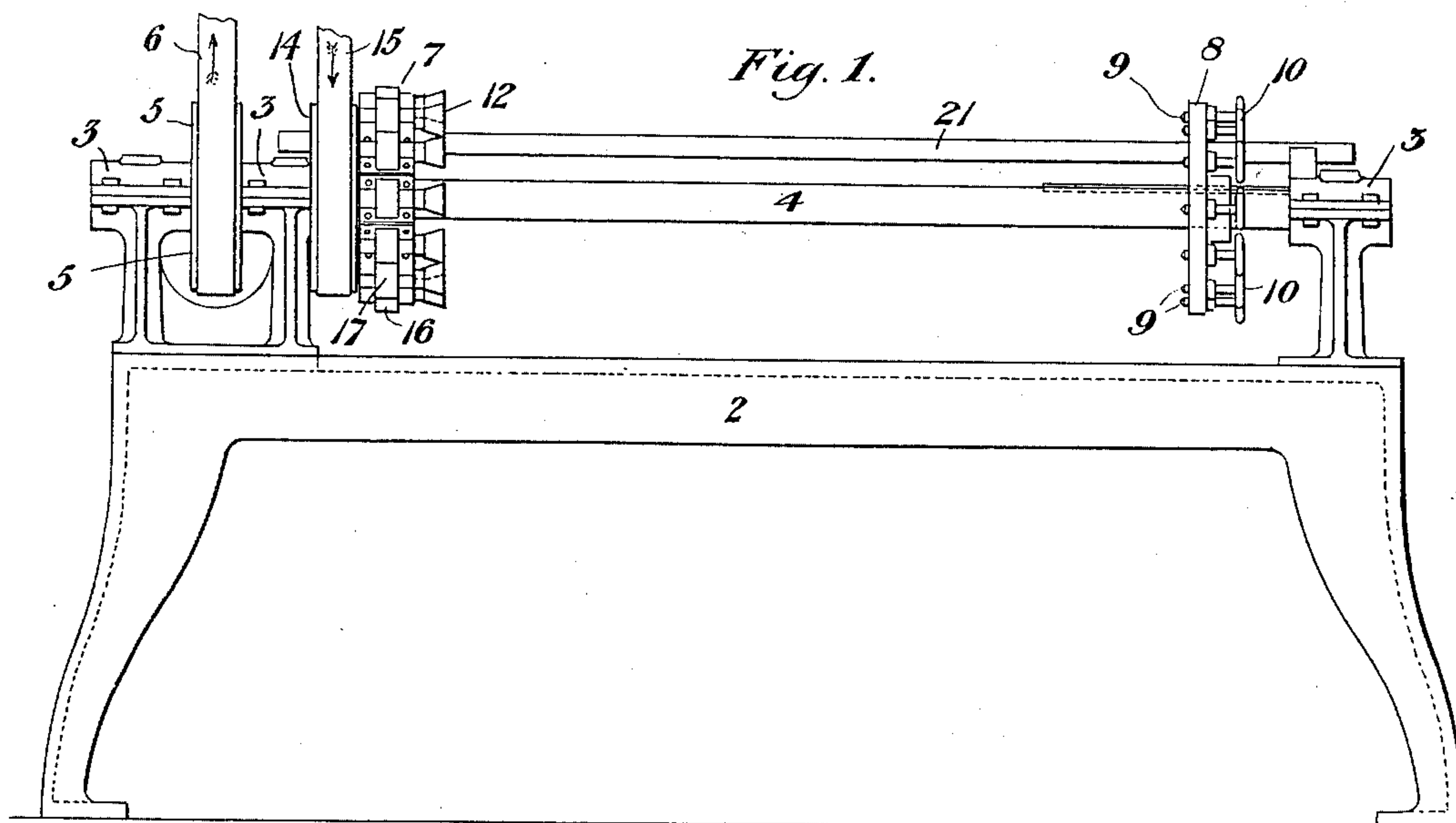
No. 630,287.

Patented Aug. 1, 1899.

F. R. CLARK.
MULTIPLE TURNING LATHE.

(Application filed June 17, 1898.)

(No Model.)



Witnesses:
J. Edwards
Watson Large

Inventor:
Frank R. Clark
by O. M. Clark
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UNITED STATES PATENT OFFICE.

FRANK R. CLARK, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO JAMES C. CLOW, OF SAME PLACE, AND FRANK MONTAGUE, OF CONNEAUTVILLE, PENNSYLVANIA.

MULTIPLE TURNING-LATHE.

SPECIFICATION forming part of Letters Patent No. 630,287, dated August 1, 1899.

Application filed June 17, 1898. Serial No. 683,663. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. CLARK, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a new and useful Improvement in Multiple Turning-Lathes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in side elevation. Fig. 2 is a partial sectional view, on an enlarged scale, through the head of the lathe. Fig. 3 is an inner face view of the head, showing the chucks. Fig. 4 is a back view with the pulley removed, showing the gearing arrangement indicated by line IV IV of Fig. 2. Fig. 5 is a perspective view of one of the shrouded bearing-caps.

My invention relates to multiple turning-lathes; and it consists of means whereby a plurality of blanks are mounted between the opposite revolving heads of the lathe in such a manner that independent rotary motion shall be imparted to the blanks during their rotary travel and means for connecting the gearing, so as to hold the blanks stationary in any desired position on the rotating head.

The various details of construction and features of advantage will be hereinafter more fully set forth.

Referring now to the drawings, 2 is the frame or bed of the lathe, upon which are mounted the bearings 3, in which is journaled the main shaft 4 of the lathe.

5 is a driving-pulley secured to the shaft, by which, through belt 6, power is applied to revolve it and to impart rotary motion to the heads 7 and 8, the head 7 being keyed in a fixed position, while head 8 is mounted on a spline and provided with a set-screw, so as to permit of longitudinal adjustment for different lengths of blank.

The head 8 is provided with a series of centering-points 9, adapted to be set into the end of the blank by handles 10 in the customary manner usual to this class of machines.

Revolubly mounted in the head 7 are the spindles 11, provided with a series of chucks 12, made in the form of a truncated pyramid,

corresponding in number to the points 9 and adapted to receive the ends of the blanks, as indicated in dotted lines in Fig. 2. The spindles have a bearing at each end in the main body portion of the head 7, which is cut out to permit the insertion of pinions 12', secured to the spindles between the bearings, while a master gear-wheel 13, journaled to an inner extension 3' of one of the bearings 3, intermeshes with the pinions. Secured to the master-gear 13 is a pulley 14, surrounding the bearing 3, to which, by belt 15, power is applied in direction reverse to that of the pulley 5. Through this means it will be seen that the spindles and chucks are rotated at a high speed in the same direction as that of the head 7, as indicated by arrows on Fig. 3, and when the machine is set in motion the blanks will be individually rotated while being carried around between the heads.

When a tool is applied, it will be seen that the blanks will be brought successively into contact with it and that the effective action will be materially increased by their rapid individual rotation. A cap 16, with a bearing for the neck of the spindle at each end and a central enlarged housing 17, is secured in position, as shown, thus providing a rigid easily-removable bearing for each spindle and effectually protecting the pinions from exposure and dirt.

When it is desired to set the chucks immovably in such progressive positions as will correspond to the polygonal faces of such shape as it is desired to turn—as, for instance, a hexagon—all of the spindles are locked in engagement with the master gear-wheel and the belt 15 is thrown out of gear, when the master-gear will revolve with the head 7. For the purpose of so locking the gears together I have shown a bolt 18 tapped into the gear through an annular slot 19 in the face of the head 7, by which the gear may be immovably set in position. For the purpose of adjusting the spindles to the proper positions for any desired form index-marks 20 on the face may be provided, to which the bolt may be set.

It will be understood that other means may be employed to set and lock the gears, and

the means I have shown are for the purpose of illustrating the principle, although quite sufficient to give good results in practice.

It will be understood that the bolt 18 is entirely removed when it is desired to rotate the spindles for round work.

A rest-bar 21 for the tool is secured in suitable bearings and extends along the front of the machine in the manner customary with wood-turning lathes.

The operation of my invention is very simple and effective and its capacity over lathes capable of turning but one blank is greatly increased, while the regularity and evenness of the work are assured by reason of each blank being subjected to the same cutting action at the same time.

The advantages, in addition, of a lathe capable of cutting polygonal shapes will be also appreciated, since such forms may be also cut as I have described, and while the faces will have a slightly-convex contour the general effect and accurate shape secured, together with the reduced cost, will place them within the reach of a large class of consumers.

Having described my invention, what I claim is—

1. In a multiple turning-lathe the combination of a suitable bed-plate, a main shaft extending the full length of the machine carrying and driving an oppositely-located chuck-head and a spindle-head, a master gear-wheel intermeshing with pinions on the chuck-spindles, bearings for the shaft with

an intervening space for a driving-wheel secured to the shaft at one end, the inner bearing being extended to form a bearing for the master-gear, a master-gear and an attached belt-pulley adjacent to the shaft-pulley, and interlocking adjustable means connecting the master-gear with the chuck-head, substantially as set forth.

2. In a multiple turning-lathe, the combination of a bed-plate, bearings for a main shaft mounted thereon at each end of the bed-plate, an inner bearing adjacent to one end of the bed-plate having an extension surrounding the shaft, a master gear-wheel journaled on the extension, a driving-pulley secured to such wheel and surrounding the bearing extension, a chuck-head rigidly secured to the shaft provided with a plurality of rotary chucks mounted on spindles having pinions intermeshing with the master gear-wheel, a locking-bolt adjustably connecting the chuck-head with the master gear-wheel, an adjustable head provided with a plurality of centering-points corresponding to the chucks mounted on the main shaft at the opposite end of the machine, and a driving-pulley secured to the main shaft adjacent to the chuck-head, substantially as set forth.

In testimony whereof I have hereunto set my hand.

FRANK R. CLARK.

Witnesses:

PETER J. EDWARDS,
C. M. CLARKE.