No. 828,695. PATENTED AUG. 14, 1906.

L. A. WELLINGTON.

CHUCK.

APPLICATION FILED JAN. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

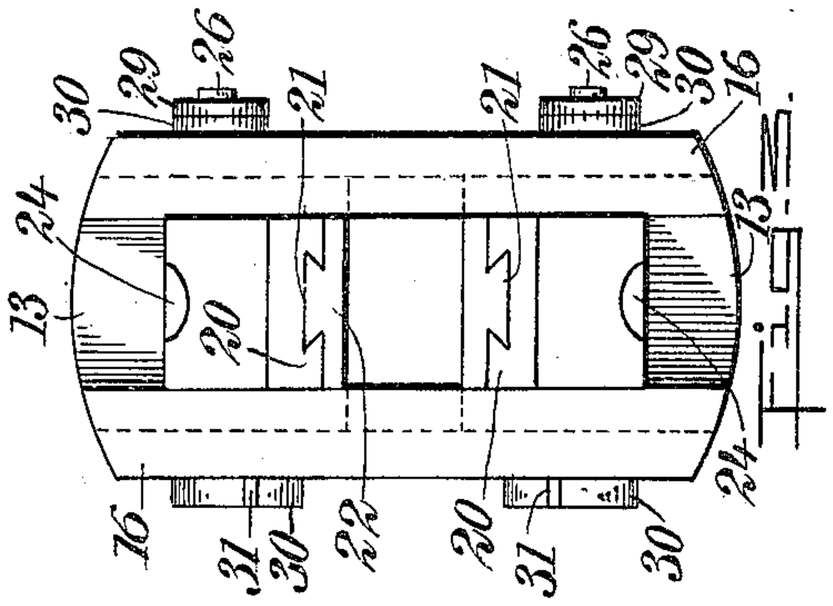


Fig. 2.

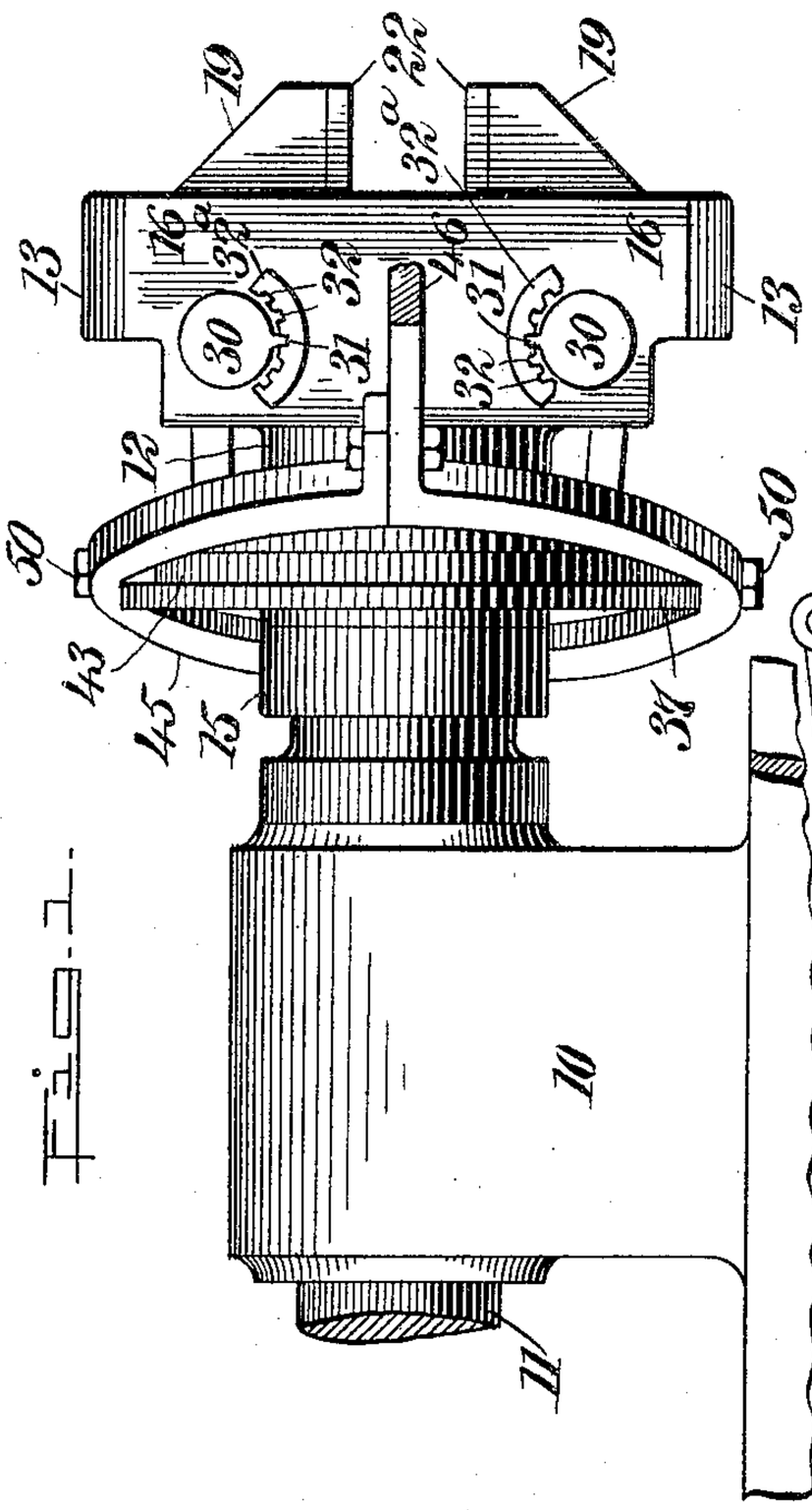
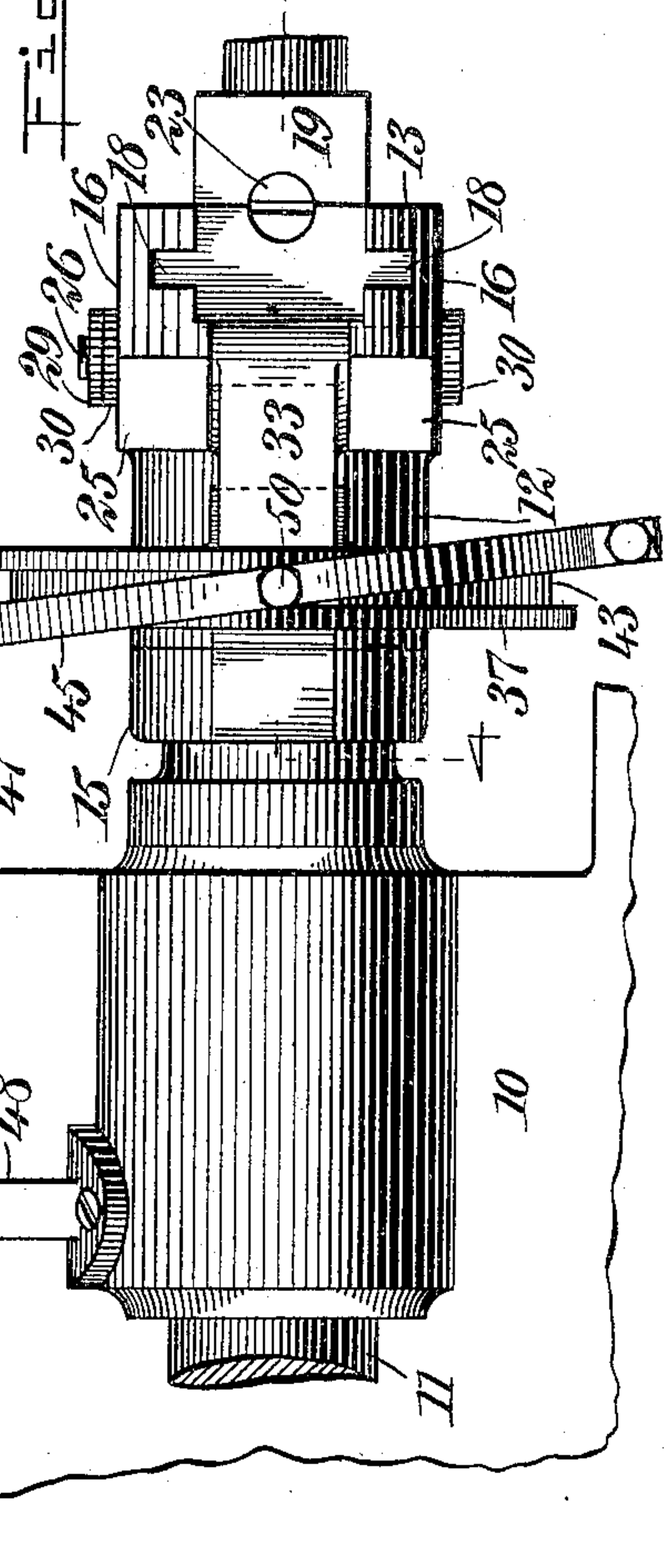


Fig. 3.



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2 SHEETS—SHEET 2.

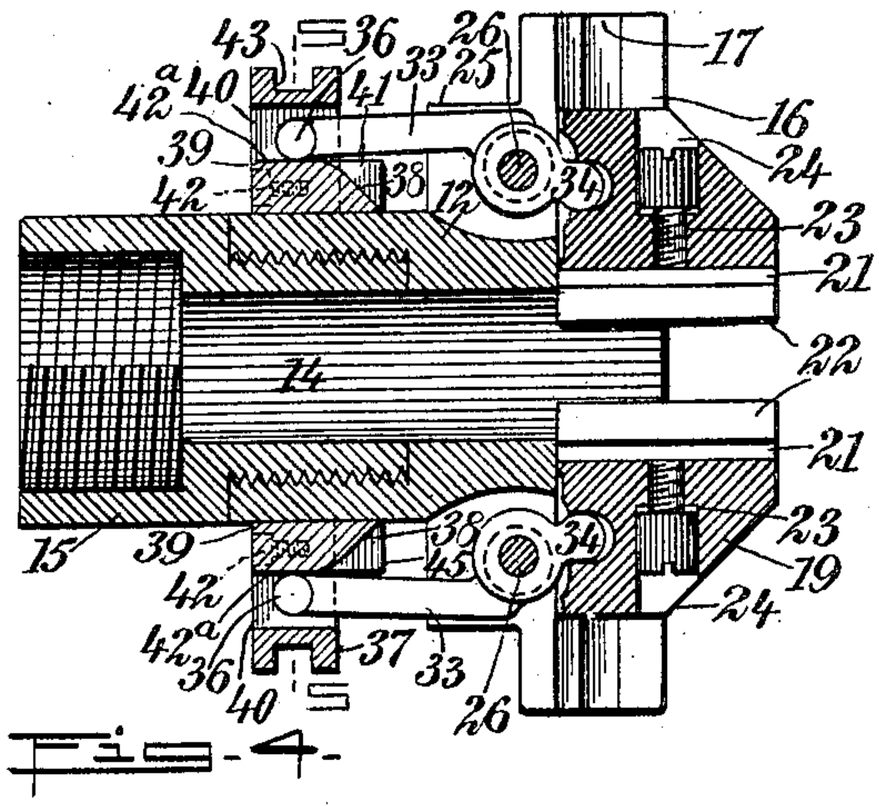

Fig. 4.

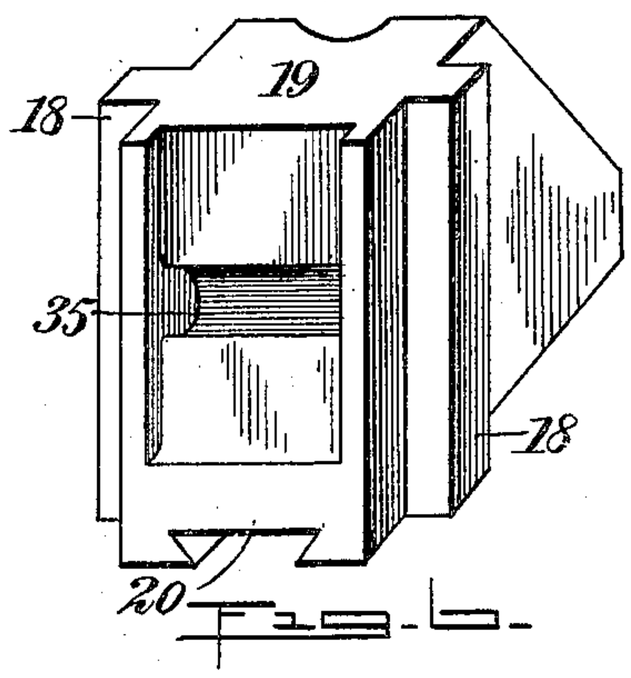

Fig. 6.

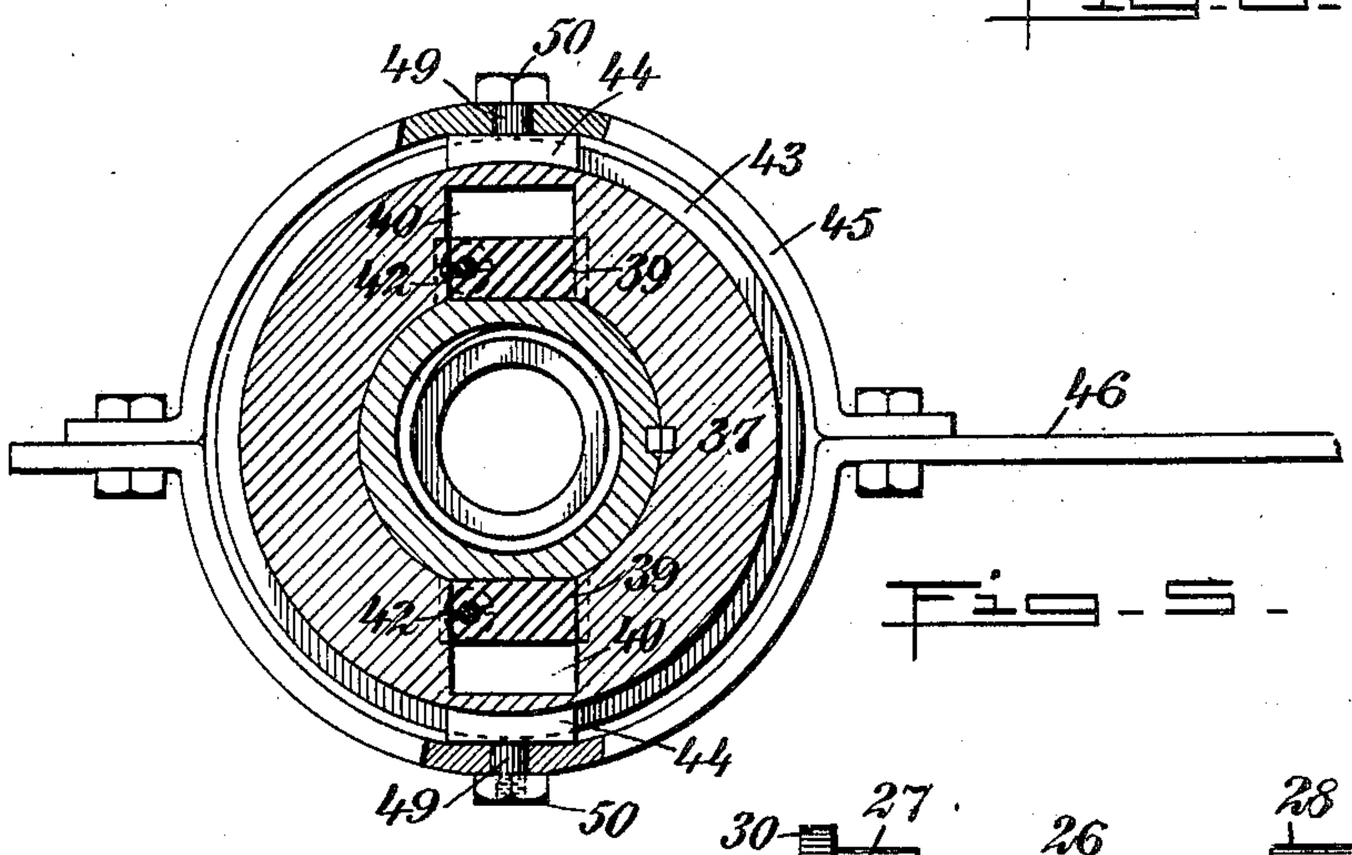

Fig. 5.

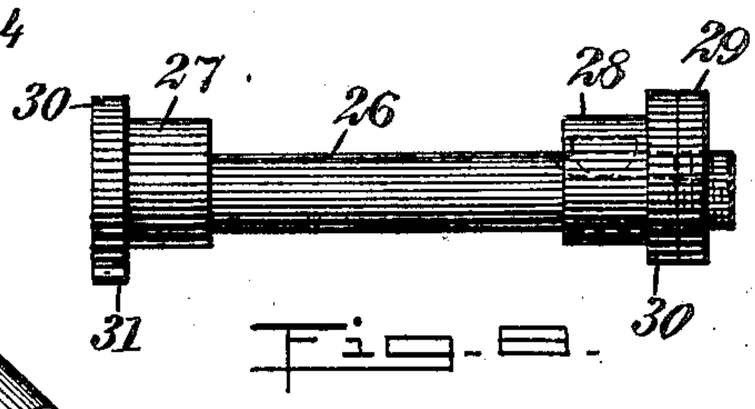

Fig. 8.

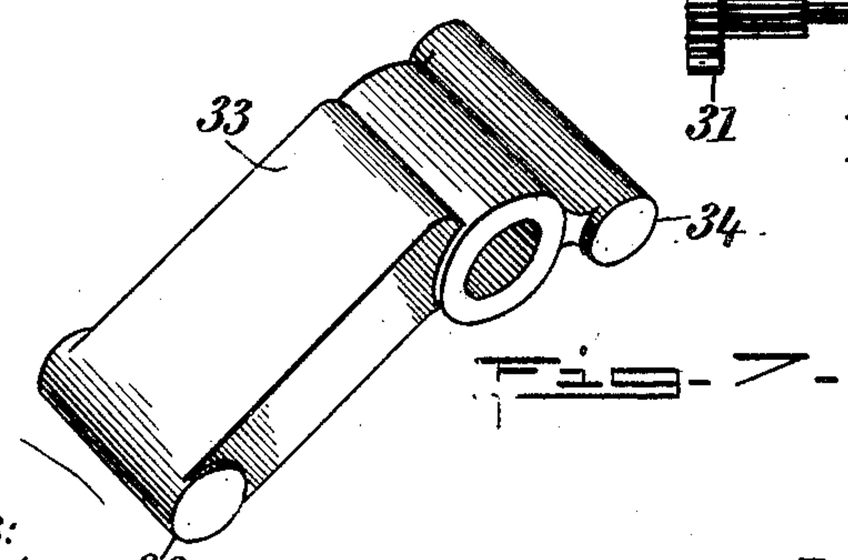

Fig. 7.

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UNITED STATES PATENT OFFICE.

LEONARD A. WELLINGTON, OF KEENE, NEW HAMPSHIRE.

CHUCK.

No. 828,695. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed January 18, 1905. Serial No. 241,595.

To all whom it may concern:

Be it known that I, LEONARD A. WELLINGTON, a citizen of the United States, and a resident of Keene, in the county of Cheshire and State of New Hampshire, have invented a new and Improved Chuck, of which the following is a full, clear, and exact description.

My invention relates to chucks adapted for use in connection with lathes, screw-machines, and the like, and has for its principal objects the provision of a simple and effective mechanism of this character.

It consists in the various features and combinations hereinafter described and claimed.

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 views.

Figure 1 is a side elevation of one embodiment of my invention shown in place upon a portion of a machine. Fig. 2 is a top plan view thereof. Fig. 3 is an end elevation of the outer face of the chuck. Fig. 4 is a longitudinal section therethrough on the line 4 4 of Fig. 2, the operating-lever being omitted. Fig. 5 is a transverse section on the line 5 5 of Fig. 4, with the operating-lever included. Fig. 6 is a persepective view of one of the jaws. Fig. 7 is a similar view of one of the actuating-levers, and Fig. 8 shows one of the eccentric devices in side elevation.

The head of a machine with which my improved chuck may be used is designated by the numeral 10 and has a threaded spindle 11. The chuck comprises a body 12, preferably of general cylindrical form and having lateral flattened projections 13 13. The body has a longitudinal opening or bore 14, which includes a threaded portion or recess to receive the machine-spindle. To adapt it for use with machines having threads of different diameters and pitches, a coupling 15 may be used, if desired, to attach it thereto. Across the end face of the body in the projections 13 is formed a channel having side walls 16 16, in which are alined grooves 17 to receive extended projections 18 from movable jaws 19 19. The adjacent faces of these jaws are shown as provided with dovetail ways 20, in which operate similar projections 21 from contact members or plates 22 for coaction with the work. Threaded through the jaws and having their ends extending into coaction with the contact members are screws 23, preferably having their heads situated in recesses 24. These screws may be turned against the contact members and serve to take up any looseness caused by imperfect workmanship or wear in use.

From the outer sides of the projections 13 extend opposite walls 25 25, serving to support eccentric devices which may include shafts 26, each having fixed upon one end an eccentric portion 27, this being rotatable in an opening in one of the walls. Keyed upon the opposite extremity of the shaft, as is particularly illustrated in Fig. 8 of the drawings, is a similar eccentric 28, operating in an alined opening in the opposite wall. This latter eccentric may be secured in place by a nut 29, engaging the threaded end of the shaft. Each of the eccentric portions is preferably enlarged at 30, these normally retaining the shaft against longitudinal movement. One of these enlargements is preferably provided with a projection 31, which may enter one of a series of recesses 32, formed in the outer side of one of the walls 25 or upon a member 32^a, secured thereto and being arranged concentrically about the opening for the eccentric. When it is desired to vary the eccentricity of one of the devices, it is only necessary to loosen the nut 29 and withdraw the keyed eccentric, when the other may be moved outwardly far enough to disengage its projection from the recess in which it may lie, whereupon it may be transferred to another and locked in place by a return of the companion eccentric and the tightening of the nut. Fulcrumed upon the shafts 26 are opposite levers 33, each of which has a rounded end 34 entering a curved recess 35, situated in the inner side of one of the chuck-jaws. The opposite arm of each lever also has a curved end portion 36 for coöperation with an actuating member which may comprise a ring 37, movable along the chuck-body, it being here illustrated as fitting the same. This actuating member has inclined contact-faces 38 38, which diverge inwardly from the jaws. They are preferably formed upon removable portions 39, which extend through openings 40 in the ring. At each side of each of these openings is an abutment 41, by which the ends of the levers may be held against disengagement from the actuating mechanism, these abutments also preventing by their contact with the ring the inward movement of the removable portions. These portions may be held against movement in the opposite direction by screws 42 threaded into them and having their heads overlapping the edges

of the openings 40. This arrangement permits the ready renewal of the contact-faces when they become worn. Beyond the inclined faces 38 are shown plane retaining-faces 42ª, lying in planes parallel to the axis of the chuck and with which the ends 36 of the levers may coöperate after they have ridden up the faces 38. About the ring 37 is shown an annular groove 43, receiving projections 44 44 from the loop portion 45 of an operating-lever 46. The fulcrum of this lever may be furnished by a link 47, conveniently pivoted upon an arm 48, projecting from the head of the machine. To permit rotary movement of the chuck in use and the play of the lever 46 in operating the jaws, the projections 44 are preferably in the form of blocks having stems 49 extending from their outer sides through openings in the loop portion of the lever and being held in place, while still allowed to turn in the openings by means of nuts 50, screwed upon threaded ends of the stems and contacting with the loop.

When the ends 36 of the actuating-levers are at the outer extremities of the inclined contact-faces or in coaction with the body of the chuck, the jaws are separated, allowing the introduction of the work. Then upon swinging the operating-lever inwardly the inclines are forced under the ends of the actuating-levers, moving the jaws toward one another and into coaction with the work and bringing the lever ends into coöperation with the faces 42ª, by which they are locked in position. Upon moving the operating-lever in the opposite direction the levers ride down the inclines, loosening the engagement of the jaws and leaving the work free to be removed. If one wishes to adjust the grip of the jaws or adapt them to work of different diameters, the eccentric devices are released, rotated, and fixed in a new position, as has been previously described, thus varying the initial position of the jaws or that in which the levers lie at the outer ends of the inclines.

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

A chuck comprising a body, jaws having recesses and which are mounted to slide with relation to the body, levers fulcrumed upon the body and engaging the recesses, a ring movable upon the chuck-body and being provided with openings, and removable portions fixed in the openings and furnishing inclined faces for contact with the levers.

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

LEONARD A. WELLINGTON.

Witnesses:
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THOMAS F. LEAHY.