

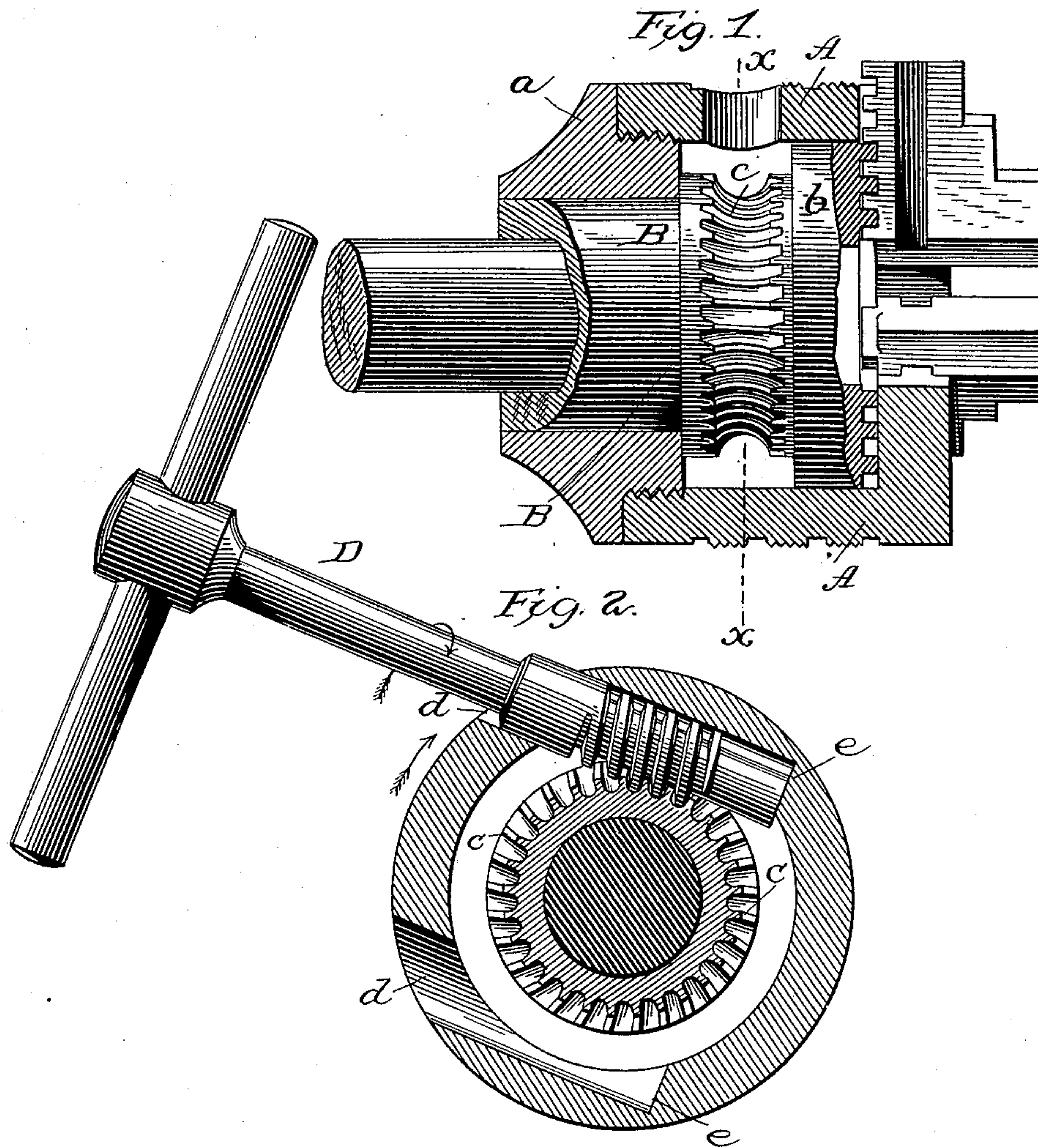
(No Model.)

L. E. WHITON.

LATHE CHUCK.

No. 366,749.

Patented July 19, 1887.



Attest:
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UNITED STATES PATENT OFFICE.

LUCIUS E. WHITON, OF NEW LONDON, CONNECTICUT, ASSIGNOR TO THE
D. E. WHITON MACHINE COMPANY, OF SAME PLACE.

LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 366,749, dated July 19, 1887.

Application filed November 17, 1886. Serial No. 219,113. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS E. WHITON, of New London, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Lathe-Chucks; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved lathe-chuck designed to be rapidly set by hand to receive successive objects of different sizes, and capable of being afterward tightened with great power upon the work held. In connection with this object I have also sought to provide cheapness of construction, durability, and the convenient application and removal of the key by which the chuck is tightened.

In the accompanying drawings, Figure 1 is a central vertical section through the casing, the core contained therein being shown partly in section and partly in side elevation. Fig. 2 is a transverse section on line *x x* of Fig. 1.

In the drawings the outer shell or casing of my improved chuck is represented at A. It is cylindrical both on the outer and inner surfaces, and the outer surface is milled to admit of easy turning by hand. The rear end has internal threads to receive the collar *a*, by which the core is held in place. The other or front end of the case is formed with radial slots, in which gripping-jaws slide in the usual manner. These gripping-jaws have upon their under or inner faces teeth which engage with the scroll-thread on the face of the core, as in ordinary scroll-chucks. The core B is formed with a head, *b*, in the face of which is the scroll engaging with the teeth of the jaws before mentioned. The core is surrounded with a series of worm-wheel teeth, *c*. The core is attached to the lathe-spindle in the ordinary manner, and the outer case is so fitted to the core as to turn freely thereon. It is also provided with two or more openings, *d*, drilled in at right angles to radii of the worm-wheel teeth *c*, and at such distance from the center of the core as to permit the engagement of the key with the worm-wheel teeth on the core. To these holes is fitted a key, D, which is a simple threaded shaft of convenient length, fitting the worm-teeth and having a suitable handle for turning. I have shown two such

openings for the key on opposite sides of the worm-wheel of the central core. The end of the key, when applied and screwed up, abuts against the shoulder *e*, formed in the case at the bottom of the drilled opening. The scroll-thread is so cut that the rotation of the core to the right tends to close the jaws upon the work, and through their resistance the rotation of the core is transmitted to the outer case and to the work held in the jaws. Assuming the core to be firmly held upon the spindle, it is plain that any rotary movement of the outer case will open or close the jaws, according to the direction in which the case is turned. It is also plain that the operation of the key will force the outer case to turn upon the central core in a direction to tighten or loosen the jaws, according as the key is applied on one side or the other of the core, and that the key may be easily removed by unscrewing the same from engagement with the worm-teeth *c*.

In the operation of my chuck, assuming the central core to be held stationary upon the lathe or drill spindle, the jaws may be rapidly changed to receive large or small drills by turning the case by hand, as described. The jaws may be thus adjusted to hold the drill, and if a stronger grip is desired than can be given by hand it may be applied by means of the key acting as before described. To loosen the grip, the key is applied in the same manner in the other opening on the opposite side, where it bears against the bottom in the same manner, but acts in an opposite direction upon the teeth of the core. On chucks of larger diameter it may be found convenient to make four or more openings for the key, so that the opening may be in convenient position at whatever point the lathe may stop.

I am aware that lathe-chucks have heretofore been devised in which a scroll-shaped cam provided with worm-teeth was made to operate the jaws, the cam being operated by a screw-key or worm; but I am not aware that any have been heretofore devised in which a detachable screw-key engaging with worm-teeth on a central core has been applied in holes on opposite sides of the shell for tightening or loosening the grip.

I claim as my invention—

1. In a lathe-chuck, the combination of a central core provided with a scroll-thread and worm-teeth and an outer case for carrying the jaws, provided with two or more openings to receive the key, so arranged that the key may be applied to turn the case in either direction with reference to the central core, substantially as described.

2. In a lathe-chuck, the combination of a central core provided with worm-teeth, an outer case having two or more openings to receive the key, and a key consisting of a screw-threaded shaft and handle for turning, all arranged to cause the case to turn in either direction with reference to the central core by means of the key, substantially as described.

3. In combination, a core fitted to be fixed

to a mandrel or lathe-spindle and engaging with the jaws of a chuck, said core having a series of worm-teeth around itself, and a case carrying the jaws, adapted to turn freely on the core, formed to be grasped by the hand for rapid opening and closing and provided with openings whereby a key may be inserted to engage with the worm-teeth on the core, all substantially as described.

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

LUCIUS E. WHITON.

Witnesses:

D. E. WHITON,
W. E. GRAY.