G. W. MOULTON.

CHUCKS.

No. 171,160. Patented Dec. 14, 1875.

Fig 1

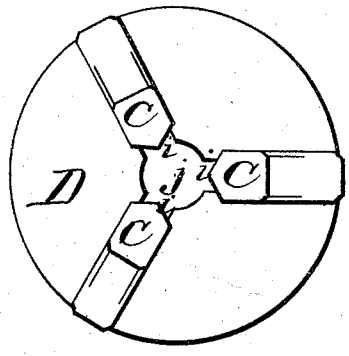


Fig 2

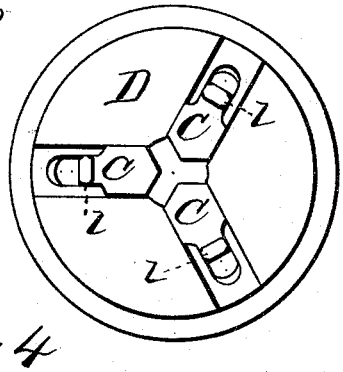


Fig 3

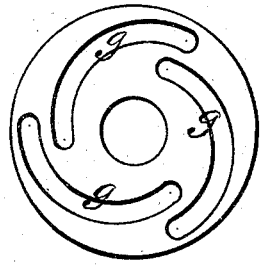


Fig 4

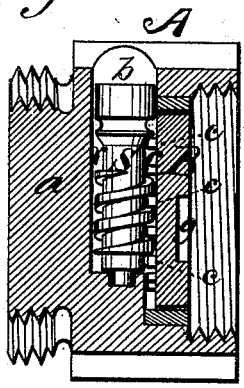


Fig 5

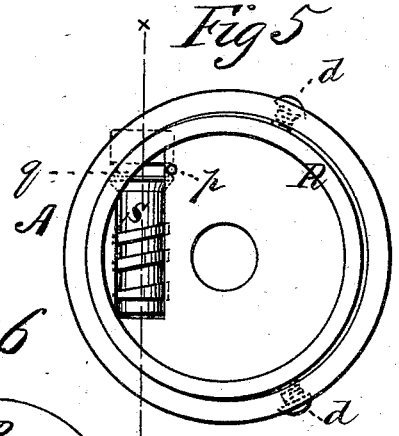
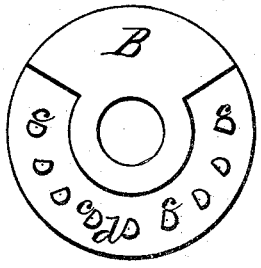


Fig 6



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE W. MOULTON, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO J. M. ELLIS, OF SAME PLACE.

IMPROVEMENT IN CHUCKS.

Specification forming part of Letters Patent No. **171,160**, dated December 14, 1875; application filed October 30, 1875.

To all whom it may concern:

Be it known that I, GEO. W. MOULTON, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and valuable Improvement in Lathe or Drill Chuck; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of the top view of the chuck. Figs. 2, 3, 5, and 6 are detail views of the same. Fig. 4 is a sectional view.

This invention has relation to improvements in chucks for drills or lathes; and it consists in the combination, with radial griping-jaws movable to or from each other, for the purpose of seizing and releasing a drill or shaft, and a slotted cam-plate actuating the said jaws, of a worm-screw projecting through the chuck-shell, and engaging with spaced pins on the inner face of the said cam-plate, whereby a convenient and reliable means is provided for operating the jaws, as will be hereinafter more fully explained and claimed.

In the annexed drawings, the letter A designates a cylindrical metallic shell of suitable diameter, which is provided at one end with a screw-threaded rabbet, *a*, by means of which the said shell is secured to a chuck-box on the end of an arbor or drill shaft. Shell A is closed at one end by a wall, in which is formed a recess, *r*, within which is journaled or seated a worm-screw, S, the slotted head *b* of which projects out beyond the periphery of the shell, as shown in Fig. 4. This worm engages with a number of spaced pins, *c*, arranged in the arc of a circle in a segmental recess, *d*, on the inner face of a metallic plate of circular form, B, arranged in the said shell. When the worm-screw S is rotated it will communicate a rotary motion to the disk B, and this motion of the latter is utilized for operating the jaws C in the following manner, to wit: The upper face of disk B is provided with a number of grooves, *g*, which are eccentric and equal in number to the jaws designed to be used. These jaws are designated by the letter C in the drawings, and are arranged each in a slot, *i*, radiating from a central orifice, *j*, in a face-plate, D, which is screwed on the shell, and they have upon their inner surfaces lugs *l*, which engage in grooves *g*. Consequently, when the worm-screw is operated, the plate B will be rotated, and grooves *g* made to perform the functions of cams, thus simultaneously actuating the griping-jaws C to or from each other, according to the direction of the rotation imparted to the said screw.

In practice disk or cam-plate B will be received in a ring, R, which is held against rotation by means of set-screws *d* passing through the walls of the shell, and bearing against the periphery of the ring. When from long use cam-plate B becomes worn upon its periphery, whereby its action upon the jaws would be unreliable and unsteady, this ring may be taken out and replaced by a thicker one, thus taking up lost motion and rendering the usefulness of the said plate of almost infinite duration. In practice, also, worm-screw S will be held from escaping out of its seat by means of a pin, *p*, which passes through the shell and engages with a groove, *q*, formed near the head of the screw. By this means screw S will freely rotate, but will be retained in its seat as long as pin *p* is engaged therewith.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The disk B, having segmental recess *d* upon its inner side, provided with spaced pins *c*, and having eccentric cam-grooves *g* upon its outer face, in combination with an operating worm-screw, S, and griping-jaws C, having lugs adapted to engage with grooves of disk B, substantially as set forth.

2. In combination with rotating cam-plate B and shell A, the ring R and set-screws *d*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEORGE W. MOULTON.

Witnesses:

GEORGE NAGEL,

J. E. ELLIS.