(No Model.)

W. A. MONTGOMERY.

LATHE CHUCK.

No. 298,015. Patented May 6, 1884.

Fig. 1

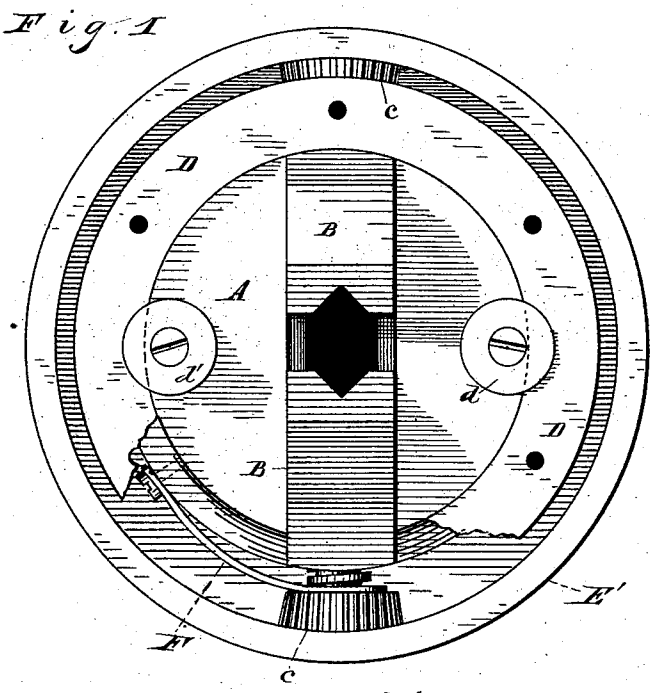


Fig. 2.

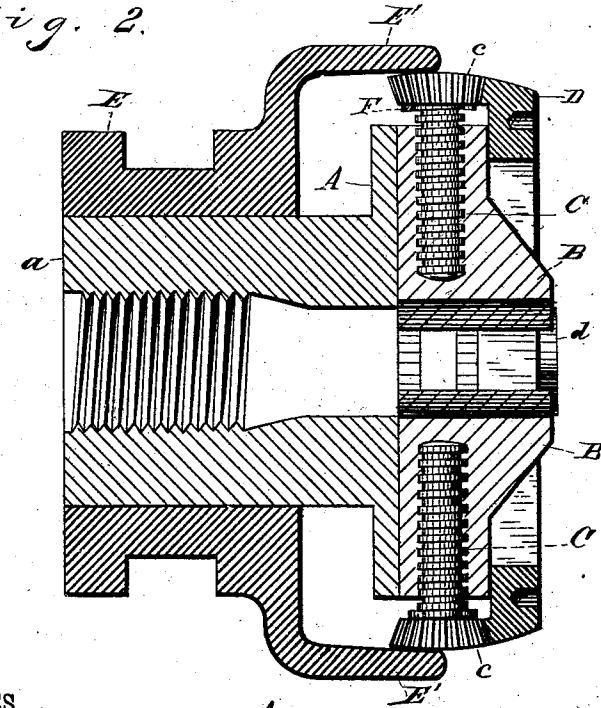
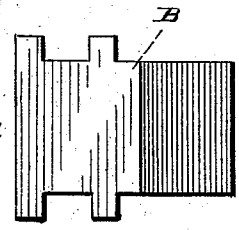


Fig. 3.



WITNESSES

W. Engel

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UNITED STATES PATENT OFFICE.

WILLIAM A. MONTGOMERY, OF CLEVELAND, OHIO.

LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 298,015, dated May 6, 1884.

Application filed July 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MONTGOMERY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lathe-Chucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in lathe-chucks; and it consists in certain features of construction, and in combination of parts, hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a front elevation view of my improved chuck, with a portion of the front broken away to show the internal construction. Fig. 2 is a side elevation in section. Fig. 3 is a view in detail.

A represents the body or shell of the chuck, with a hub, *a*, bored and threaded to engage the mandrel of the lathe.

B represents the jaws, a top view of which is shown in Fig. 3. The inner ends of these jaws, as shown in Fig. 1, are provided each with a V-shaped groove suitable for grasping different kinds of work; and the jaws are bored and threaded to engage the screws C, that are firmly attached to the bevel-pinions *c*, that engage a bevel-gear on the back of the ring D. This ring is seated in a recess made at the outer front corner of part A, on which the ring may be revolved, holes on the front of the ring being provided to engage a suitable lever or wrench for this purpose. The ring is held to its place by the caps and screws shown at *d'*.

E is a hub adapted to slide on the hub *a*, and provided with a groove for engaging a forked lever, or other suitable devices for sliding the hub, and terminating at the right in a band or ring, E', integral with the hub E, and with a tapering bore, whose smallest diameter is at the back or left-hand side. When this part is at the limit of its travel toward the left hand, as shown in Fig. 2, the rim E' projects over and engages the ends of the pinions *c;* and when moved to the right, by means of the tapering bore of the rim E', as aforesaid, the pinions *c* and their attached screws and jaws will be forced toward the center of the chuck.

F are springs attached to the part A, and embracing the screws C, and pressing against the inner side of the gears *c*, by means of which the gears are always held in contact with the rim E'.

The operation of the device is as follows: By revolving the ring D, the pinions *c* and the screws C are revolved, and the jaws B are drawn outward or pressed inward, at the pleasure of the operator. Meantime, by the action of the aforesaid springs, the said pinions are kept in contact with the rim E'. If the jaws are set to receive, for instance, rods of a given size, one of these rods, when inserted between the jaws, may be held firmly by sliding the part E to the right, by means of which, as aforesaid, the jaws will be forced toward the center and made to grasp the work. These jaws may be made to grasp the work from the inside, as in case of pulleys, rings, and similar work, and the part E' arranged so as to press outward instead of inward, if so desired. After the jaws have been "set" in the desired position, the other manipulations, including placing work in and removing it from the chuck, may all be made while the lathe is in full motion. There is sufficient "play" between the parts *c* and D to admit of the gears *c* moving radially the short distances required of them; but the parts E and *c* are returned to the position shown in Fig. 2, when the ring D is moved so that the radial movement aforesaid does not interfere with the working of the gears. Of course, any number of jaws may be used.

What I claim is—

1. The combination, with the body or shell of a chuck, sliding jaws adjustably secured to screws, and springs yieldingly connecting the screws to the shell or casing, of devices for simultaneously forcing the jaws toward each other.

2. The combination, with the body or shell of a chuck, sliding jaws adjustably secured to screws, pinions secured to the outer ends of the screws, and springs for yieldingly connecting the jaws to the body or shell, of the ring D, provided with teeth for engaging the pinions

on the screws, and devices for simultaneously forcing the jaws toward each other.

3. The combination, with the body or shell of a chuck, the sliding jaws, screws, pinions, springs, and ring D, of the hub provided with the flange E′, all of the above parts combined and adapted to operate as described.

In testimony whereof I sign this specification, in the presence of two witnesses, this 16th day of July, 1883.

WILLIAM A. MONTGOMERY.

Witnesses:

CHAS. H. DORER,

GEO. W. KING.