(Model.)

C. E. ABRAMS.

CHUCK.

No. 435,475. Patented Sept. 2, 1890.

Fig. 1.

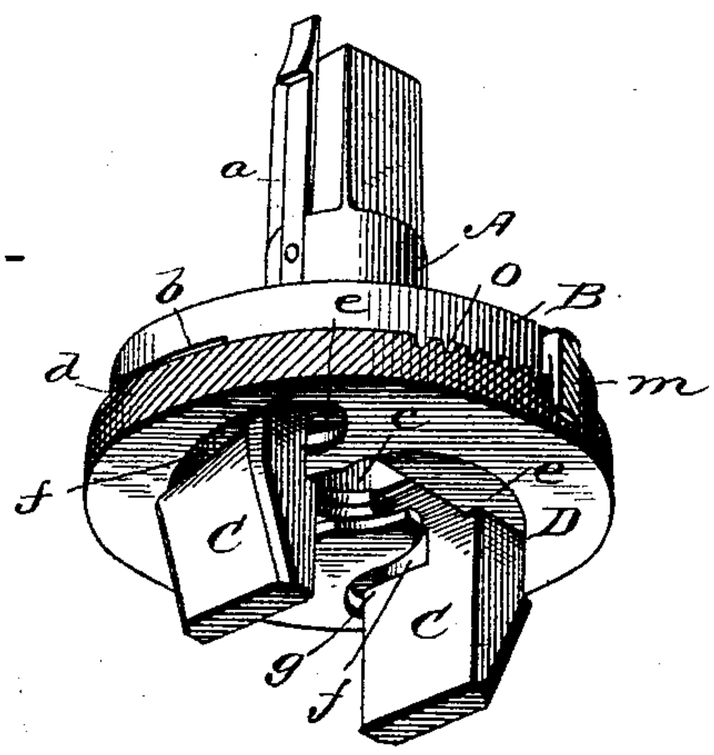
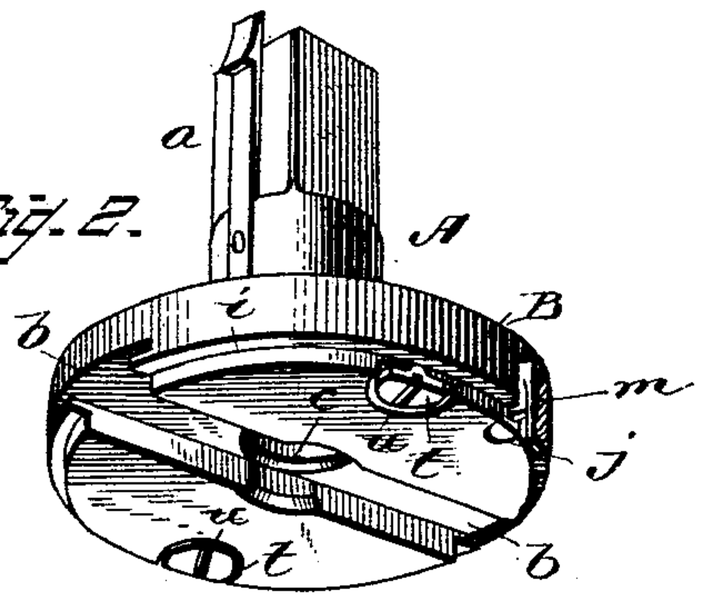
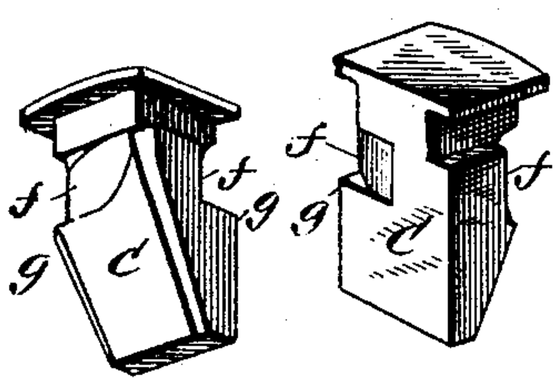


Fig. 2.





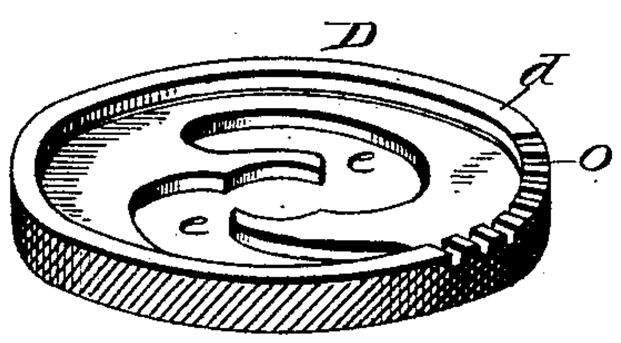
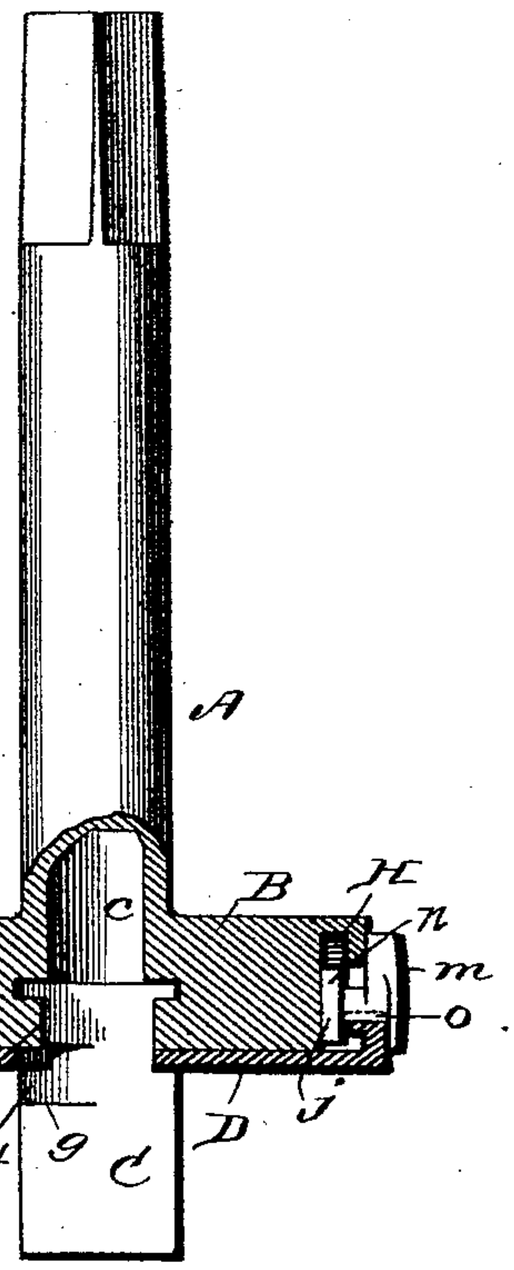


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES E. ABRAMS, OF CHATHAM, NEW YORK.

CHUCK.

SPECIFICATION forming part of Letters Patent No. 435,475, dated September 2, 1890.

Application filed February 5, 1890. Serial No. 339,256. (Model.)

To all whom it may concern:

Be it known that I, CHARLES E. ABRAMS, a citizen of the United States, residing at Chatham, in the county of Columbia and State of New York, have invented certain new and useful Improvements in Chucks; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in chucks; and it has for its object, among others, to provide an improved chuck of few parts which shall be most efficient in operation and not liable to get out of order. I also provide simple means for locking the parts in any desired position.

Other objects and advantages of the invention will hereinafter be made apparent, and the novel features thereof will be specifically pointed out in the appended claims. The novelty resides essentially in the peculiar combinations and the construction, arrangement and adaptation of parts, all as more fully hereinafter described, and shown n the drawings.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved device. Fig. 2 is a like view of the several parts composing the device separated, but shown in their relative positions. Fig. 3 is a cross-section through the completed device.

Like letters of reference indicate like parts throughout the several views.

The chuck is applicable to various uses, such as in a lathe or upon tool-handles.

In the drawings I have shown two different forms of devices to which it is applicable. All the essential features remain the same, the only change or difference being in the shape and character of the shank.

Referring now to the details of the drawings by letter, A designates the shank, which may be of any desired form, either as shown in Fig. 1 or as shown in Fig. 3, the change in form being such as is required to adapt to the different uses to which it is to be put. The form of shank shown in Fig. 3 is designed for use with an ordinary bit-stock, that in Fig. 1 for any other use being provided with a spring-arm *a*, having a notch at the free end, as shown in said figure, the use of which will be readily understood, being a well-known construction for holding devices of this character in their handles. This shank carries a disk or head B, provided upon its outer face with a diametrical channel or groove *b*, in which the holding-jaws C are designed to move. These channels are undercut, as shown, and the shanks of the holding-jaws are inversely formed to engage the said undercut channels or grooves in such a manner that while the jaws are free to move lengthwise of the channels they are prevented from accidental withdrawal or displacement therefrom vertically or sidewise. These jaws may have roughened grasping-faces, if desired; but such provision will not ordinarily be necessary.

The disk is provided with a central passage-way *c*, which enters for a distance in the shank, as shown in the drawings, to receive a portion or end of the instrument or article held by the jaws.

D is the means for operating the jaws. It consists of a disk having a right-angled flange or rim *d*, as shown in Fig. 2, the outer edge of the disk and rim being milled or otherwise roughened to afford a better grasp for the hand by which it is designed to be rotated. The face of the disk is formed with two oppositely-extending slots *e*, beginning at opposite sides of the disk and extending upon curved lines toward the center, where they unite, as shown. These slots have each a short and a long side, both of which are cam-shaped, as shown, which in practice engage the holding-jaws, and as the disk is revolved the cams force the jaws toward or away from each other. The jaws are cut away upon diagonally-opposite edges, as shown at *f*, so as to form a proper bearing for the sides of the cam-shaped slots. The convex inner faces provide for the working of the tongues of the disk D, as will be readily understood. The passage-way between the two points of the disk between the

slots affords a free unobstructed passage through the stationary disk and through the shank.

The upper edge of the stationary disk is provided with an annular shoulder *i*, on which the rotary disk is designed to rest, and at one point the stationary disk is provided with a depression *j*, in which works the catch *m*, having a portion working in a deeper depression and resting upon a spring H located therein, the catch having a milled edge and a portion *n*, which is designed to engage back of the rim or flange of the rotary disk, and, being normally pressed outward by the said spring, serves to hold the rotary disk in its adjusted position. The catch *m* engages back of the rim of the disks D and B and the notches *j*. The parts are readily assembled by first engaging the jaws in their channels and then placing the disk D in position. The portion of the rim or flange of the rotary disk over which this catch works is notched, as shown at *o*, and these notches may be graduated or marked so as to readily determine how far to move the disk to accomplish the desired adjustment.

The operation is simple and will be readily understood. The jaws are to hold the implement. They are advanced or moved toward each other by simply moving the catch inward, so as to release the rotary disk, when, by revolving the latter, the cams acting upon the shanks of the jaws cause them to move inward or outward, according to the direction in which the disk is moved. The catch is automatic, locking the parts in position as soon as it is released.

The screws *t t*, which are set within the countersunk recesses *u u* in the upper face of the disk or head B, adjacent to its outer edges, serve to lock the disk D against vertical displacement, as will be readily understood. When the screw-heads have been turned so as to engage the groove formed within the inner edge of the disk, the parts will be locked against displacement, and when the screws are turned partly around, so as to disengage their heads from the groove in the jaws D, the said disk may be readily disengaged from the head or disk B. For this purpose the heads of the screws are made segmental, as shown. The rounded portions *f* are extended below the disk D to permit of the ready assembling of the parts.

What I claim as new is—

1. The combination, with the shank and its head, of the rotary disk formed with cam-shaped slots and the jaws, the shanks of which are cut away upon diagonally-opposite edges, as set forth.

2. The combination, with the shank and its head, of the jaws, the rotary disk formed with cam-shaped slots, and a locking-catch on the head of the shank, substantially as described.

3. The combination, with the shank and its head, of the jaws, the rotary disk formed with cam-shaped slots and annular flange, and the spring-actuated catch working in guides in the head of the shank and engaging the flange of the rotary disk, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. E. ABRAMS.

Witnesses:
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JOHN B. TRAVER.