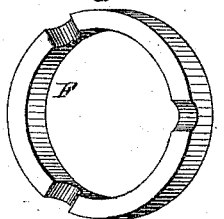
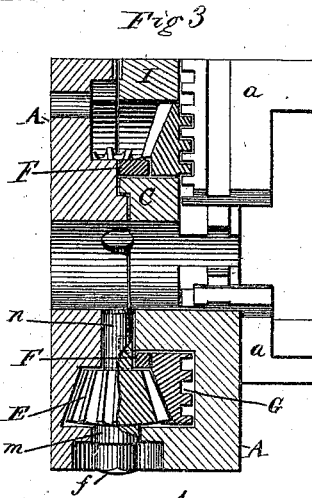
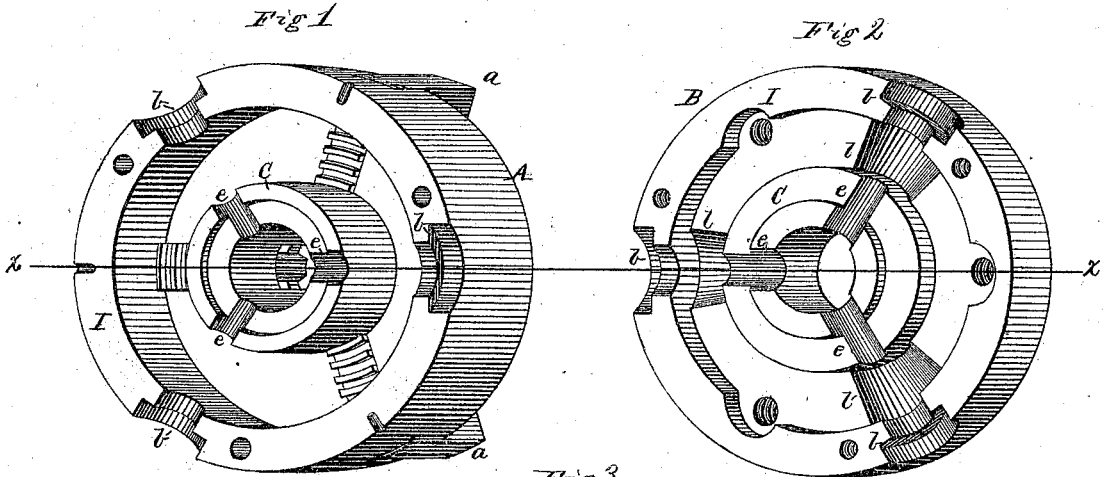


A. F. CUSHMAN.

Improvement in Machinists Lathe Chucks.

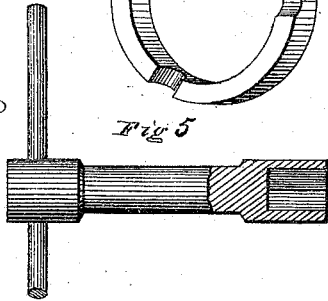
No. 120,863.

Patented Nov. 14, 1871.



Witnesses.

Harry King
W. W. Dodge.



Inventor.

A. F. Cushman
by Dodge & Munn
Attys.

UNITED STATES PATENT OFFICE.

AUSTIN F. CUSHMAN, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN MACHINISTS' LATHE-CHUCKS.

Specification forming part of Letters Patent No. 120,863, dated November 14, 1871.

To all whom it may concern:

Be it known that I, AUSTIN F. CUSHMAN, of Hartford, in the county of Hartford and State of Connecticut, have invented certain Improvements in Scroll-Chucks, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to scroll-chucks; and the object of the invention is to furnish a chuck which, while it shall embrace the usual combination of scroll, rack, pinions, and jaws, and a case or shell that shall practically exclude chips and dirt from the interior works, shall also be of a simpler construction than those having the same operative mechanism now in use, and, therefore, a chuck that can be manufactured at less cost.

Figure 1 is a perspective view of the front plate, showing its inner face. Fig. 2 is a similar view of the rear plate. Fig. 3 is a transverse section of the chuck complete; and Figs. 4 and 5 are portions shown detached, the latter representing the key for operating the chuck.

In this class of chucks it is desirable to have the case or shell constructed so as to leave no external openings for the admission of chips, filings, &c., to the interior, which, if admitted, clog the working parts and thereby render the chuck inoperative. It is also an object to do this by the use of the least possible number of pieces, and thereby to simplify and cheapen the construction of the chuck. I accomplish these results in the following manner: I take a metal plate, A, of a size adapted to the size of the intended chuck, and fit it to receive the sliding jaws *a* on its front face, in the usual manner. I then form in its rear face an annular groove, which leaves an outer rim, I, and a central annular hub, C, as represented in Fig. 1. In the face of the rim I, I form semicircular grooves, *b*, and in the face of the hub C I make corresponding grooves or recesses, *e*, as shown, these recesses *b* and *e* forming bearings for the journals *n* and *m* of the pinions E, which latter are shown in position in Fig. 3. I then take another and similar plate, B, and form on one of its faces a corresponding rim, I, and hub, C, having similar recesses, *b* and *e*, formed in them, respectively,

as shown in Fig. 2, the inner faces of these two plates A and B thus being counterparts of each other, the rear plate B being somewhat thinner than the plate A and its annular groove being less in depth, in consequence of which a recess, *l*, is cut in its bottom at the point where the pinions E are located to furnish room for them to turn freely. These two plates A and B, thus constructed, constitute the entire body or shell of the chuck. The usually-constructed scroll G, with a rack on its rear face, is slipped onto the hub C of the front plate A, and the bevel-pinions E are laid with their journals *m n* in the recesses *b e*, a ring, F, first being slipped over the hub to hold the scroll G up to its place, after which the plate B is placed over the whole and secured firmly to the plate A by means of screws passing through both.

It will thus be seen that when the two plates A and B are thus formed and united they alone form the bearings for the pinion-shafts, and, together with said shafts, completely inclose the internal mechanism of the chuck, and that when these plates and pinions are united they form a body or shell for the chuck, which has no external opening, and which, therefore, excludes all chips, filings, and similar foreign matter.

By this plan of constructing the shell it is rendered extremely simple and cheap, besides being very durable.

I am aware that chucks have been made of which the case or shell is in two parts, and which presents no opening through which chips or dirt can find their way to the mechanism within it, and I do not, therefore, claim as my invention these characteristic features of a chuck, nor any chuck as an entirety; but

I do claim—

As an improvement in the construction of chucks, the case or shell, composed of the two parts A and B, as described, jointly with the combination of the pinions and their shafts, the annular and cogged scroll-plate, and the jaws, as set forth.

AUSTIN F. CUSHMAN.

Witnesses:

GEORGE G. SELL,
F. B. SMITH.

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