J. M. SMITH.

Lathe Chuck.

No. 68,537. Patented Sept. 3, 1867.

Fig. 1.

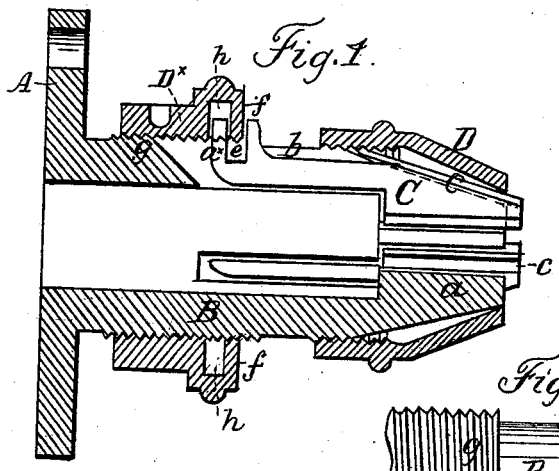


Fig. 3.

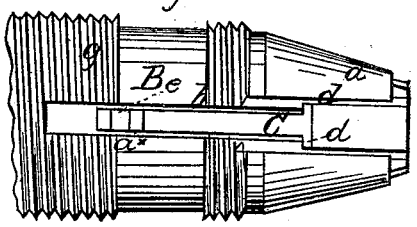
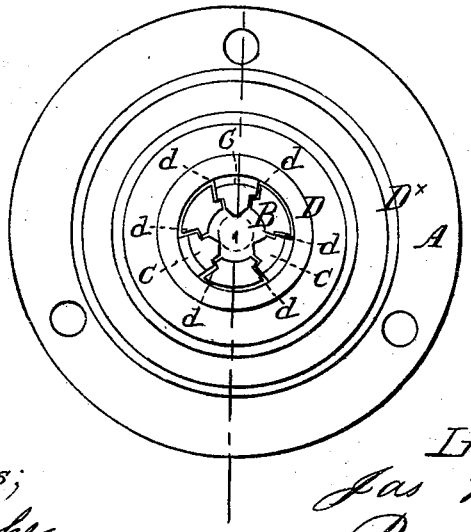


Fig. 2.



Witnesses;
Theo Tusche
Wm Treum

Inventor;
Jas M Smith
Per Munn & Co
Attorneys

United States Patent Office.

JAMES M. SMITH, OF SEYMOUR, CONNECTICUT.

Letters Patent No. 68,537, *dated September* 3, 1867.

IMPROVEMENT IN CHUCKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES M. SMITH, of Seymour, in the county of New Haven, and State of Connecticut, have invented a new and improved Chuck for Lathes; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention relates to a new and improved chuck for turning-lathes, and has for its object, first, simplicity of construction; secondly, facility in manipulating it to hold or grasp articles to be turned or drilled, and also to release said articles; and thirdly, the admission within the chuck of long articles, such as rods, drills, or other articles to be held by it, for which ordinary chucks are not adapted. In the accompanying sheet of drawings—

Figure 1 is a longitudinal central section of my invention, taken in the line *x x*, fig. 2.

Figure 2, an end view of the same.

Figure 3, a side view of the same, with the screw-collar and conical shell detached.

Similar letters of reference indicate like parts.

A represents a circular plate or flange at one end of a tube, B, the outer end of the latter being of conical form, as shown at *a*. This tube B is slotted longitudinally, three slots *b* being used; and in each slot there is fitted a sliding-jaw, C, the exterior surfaces of the outer parts of which are bevelled, as shown at *c*, and have a flange, *d*, projecting from each side, to fit into recesses at the sides of the slots *b*, as shown clearly in fig. 2. These jaws are kept in proper position in the slots by means of a conical shell, D, which screws on the outer part of the tube B, the bevelled exterior parts of the jaws being in contact with the outer part of the shell. The inner ends $a^{\times}$ of the jaws C are bent outward, at right angles with the main portions of the same, and are slotted, as shown at *e*, and these slots receive a flange, *f*, at the front end of a screw-collar, $D^{\times}$, which is fitted on a screw, *g*, cut on the exterior of the tube B, as shown clearly in fig. 1, a groove, *h*, being made in the inner side of the collar $D^{\times}$, to receive the inner parts of the ends $a^{\times}$ of the jaws.

From the above description it will be seen that by turning the screw-collar $D^{\times}$ the jaws C may be moved inward and outward, and when moved outward from the end of the shell D will, owing to the bevelled edges *c* and the conical shell D, gradually approach each other, and grasp and hold an article placed between or within them, and it will further be seen that more or less of the article chucked may be fitted or passed within B, such, for instance, as the shank of a drill, rod, or other article held by the chuck. This is often of great convenience, as many articles, such as rods, etc., are drilled in the end, and many slender articles require to be turned off at some distance from their ends, and if chucked at one end, the article, in consequence of its small diameter, trembles, vibrates, or yields under the pressure of the turning-tool, and cannot be turned true without the application of an intermediate bearing, and even then only with exercising considerable care.

The device may be applied to any ordinary turning-lathe, the plate or flange A being screwed to a face-plate on the end of the mandrel.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. The screw-collar $D^{\times}$, fitting over the tube B, and provided with the groove *h*, for receiving the right-angular arm $a^{\times}$ of the jaws C, and with the flange *f* fitting into the groove *e* of right-angular arm of said jaw, as herein set forth, for the purpose specified.

2. The jaws C, when provided with the flanges *d*, and having their inner right-angular ends connected to the screw-collar $D^{\times}$, arranged in relation with the tube B, having the circular plate A, whereby articles of any length are held, passing through said tube and plate, as herein shown and described.

3. The construction and arrangement of the annular plate A, double screw-threaded tube B, collars $D^{\times}$ and D, and flanged jaws C, as herein shown and described, for the purpose specified.

The above specification of my invention signed by me this 1st day of May, 1867.

JAMES M. SMITH.

Witnesses:

WM. F. MCNAMARA,

J. A. SERVICE.