

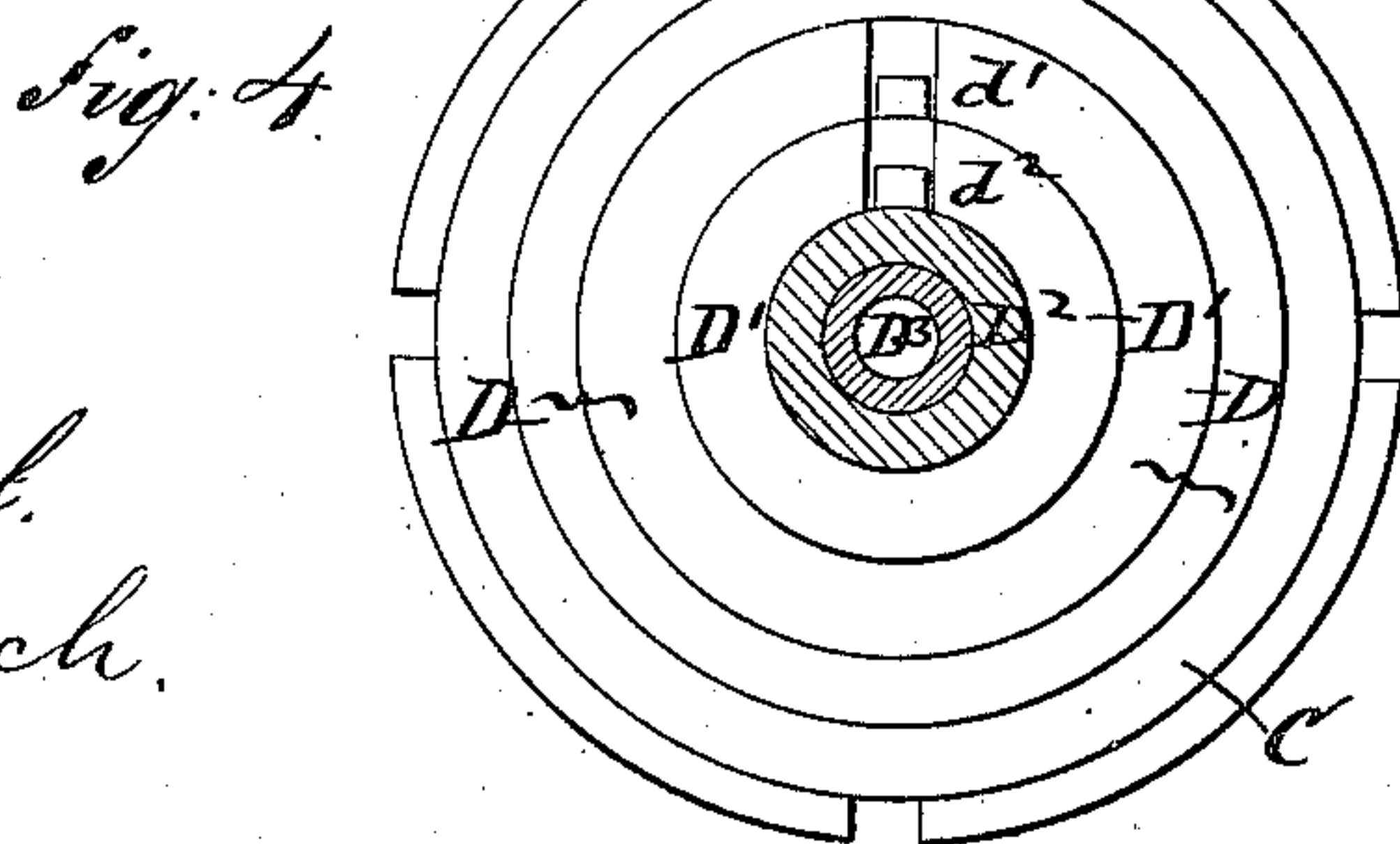
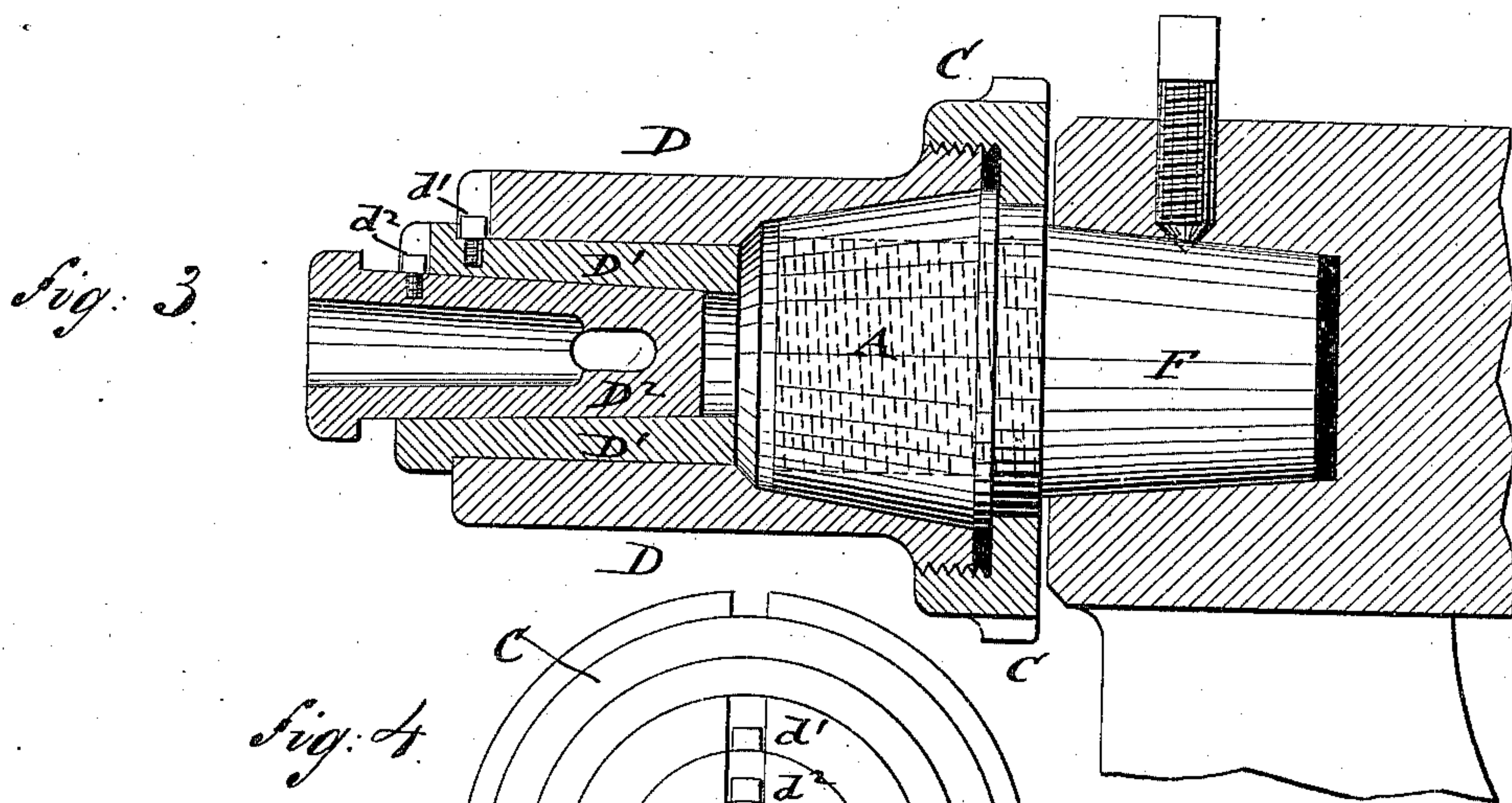
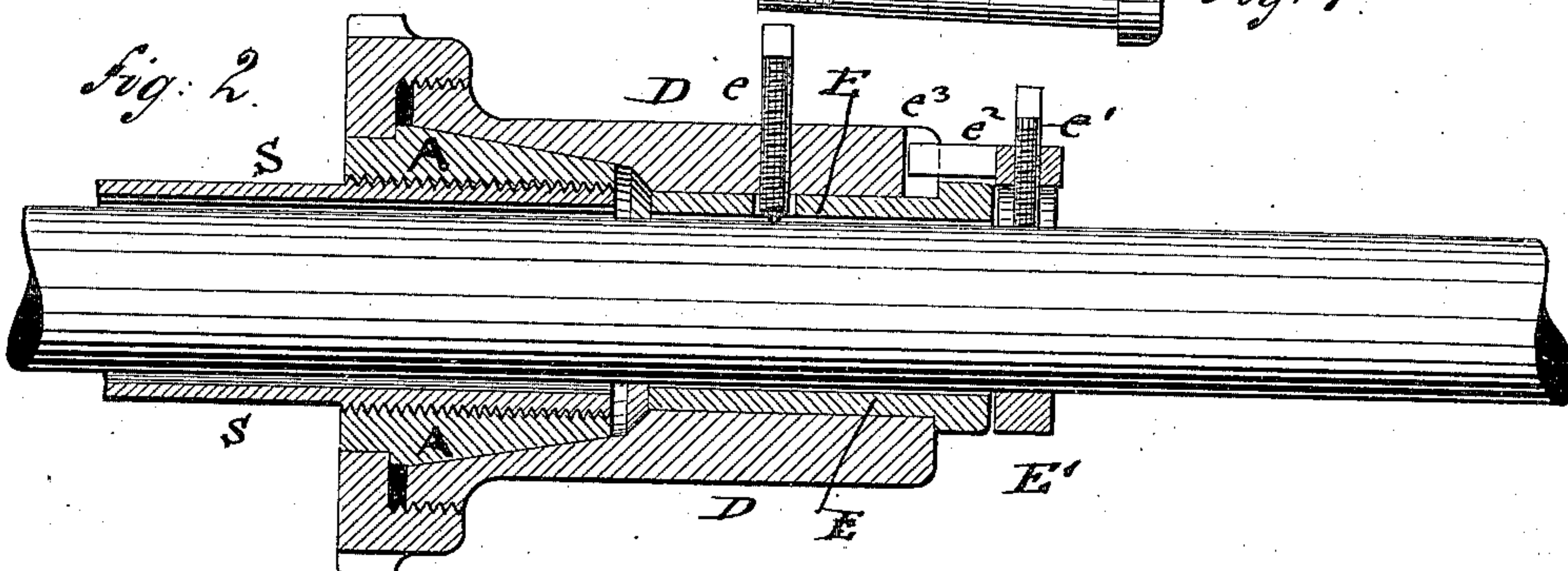
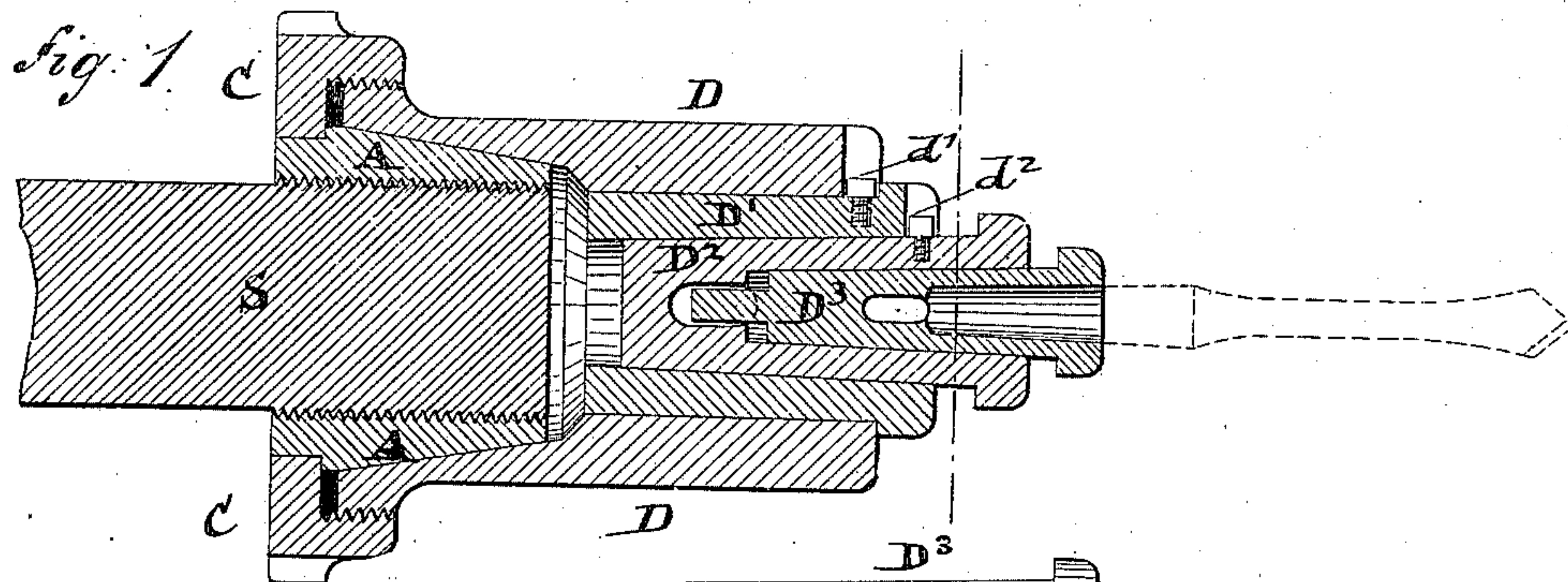
(No Model.)

G. BIRKMANN.

LATHE CHUCK.

No. 309,288.

Patented Dec. 16, 1884.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORG BIRKMANN, OF NEW YORK, N. Y.

## LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 309,288, dated December 16, 1884.

Application filed June 18, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GEORG BIRKMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Lathe-Chucks, of which the following is a specification.

This invention has reference to an improved lathe-chuck for holding boring-tools and shafts for facing; and the invention consists of a lathe-chuck in which a conical sleeve is screwed on the solid or hollow spindle of the lathe, said sleeve being connected by a screw-collar with a cylindrical socket, the latter receiving a number of smaller sockets for holding the shanks of the different sizes of boring-drills, or bushings of different sizes for holding the shafts to be faced.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of my improved lathe-chuck, shown with a set of detachable sockets for the shanks of the different boring-tools. Fig. 1<sup>a</sup> is a side view of the smallest tool-socket detached. Fig. 2 is a vertical longitudinal section of the lathe-chuck arranged to support a shaft; Fig. 3, a vertical longitudinal section of the same, shown as attached rigidly to one of the tail-stocks of the lathe; and Fig. 4 is an end elevation of the chuck, partly in section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a conical sleeve that corresponds in size to the diameter of the solid or hollow lathe-spindle S. The conical sleeve A is screwed by an interior screw-thread on the exteriorly-threaded spindle S, as shown in Figs. 1 and 2. The conical sleeve is turned off at the thicker end, so as to form a shoulder, *a*, for an angular screw-collar, C, the threaded forward-extending portion of which engages the threaded rear end of a cylindrical main socket, D, that is fitted by its rear end accurately to the conical sleeve A. The inner front part of the main socket D is made cylindrical, and adapted to receive either a set or nest of auxiliary sockets, D' D<sup>2</sup> D<sup>3</sup>, of different sizes, which are secured in position by set-screws *d' d<sup>2</sup>*, said sockets serving to receive the shanks of different sizes of drills or other boring-tools. The innermost socket, D<sup>3</sup>, has a flattened rear end, which fits into an extension-socket of the next larger

socket, D<sup>2</sup>, as shown in Figs. 1 and 1<sup>a</sup>, by which the socket D is retained in position in connection with the pressure of the work on the boring-tool without requiring a special set-screw.

When the chuck is desired to be used for facing shafts, one or more cylindrical bushings, E, are inserted into the main socket D, and retained therein by set-screws *e*, that also press upon the shaft, so as to retain the same in rigid position against longitudinal displacement, while axial displacement is prevented by a collar, E', and set-screw *e'*, the collar E' engaging by a lug, *e<sup>2</sup>*, a recess, *e<sup>3</sup>*, of the main socket D. The shaft to be faced in the lathe can thus be rigidly secured to the lathe-chuck and turned with the same, so as to be operated upon by the facing-tool.

In some cases it is desired to arrange the boring-tool in a fixed position on the lathe and conduct the work against the same. In this case the conical sleeve A is screwed upon a solid piece, F, secured to one of the tail-stocks of the lathe, as shown in Fig. 3.

The advantages of my improved lathe-chuck are, first, that it can be adapted for use with any size of lathe-spindles by providing conical sleeves A of different diameters; secondly, that it is adapted to perform different kinds of work, such as boring holes of different sizes, facing shafts of different sizes, &c.; and, lastly, that it can be used with any metal-working lathe in common use with little extra expense.

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

The combination, with a lathe-spindle, of a conical sleeve screwed therein, a cylindrical main socket fitted to the sleeve, a screw-collar connecting the sleeve and main socket, and one or more auxiliary sockets or bushings screwed into the main socket and adapted to receive different sizes of boring-tools or support different sizes of shafts, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GEORG BIRKMANN.

Witnesses:

PAUL GOEPEL,  
SIDNEY MANN.