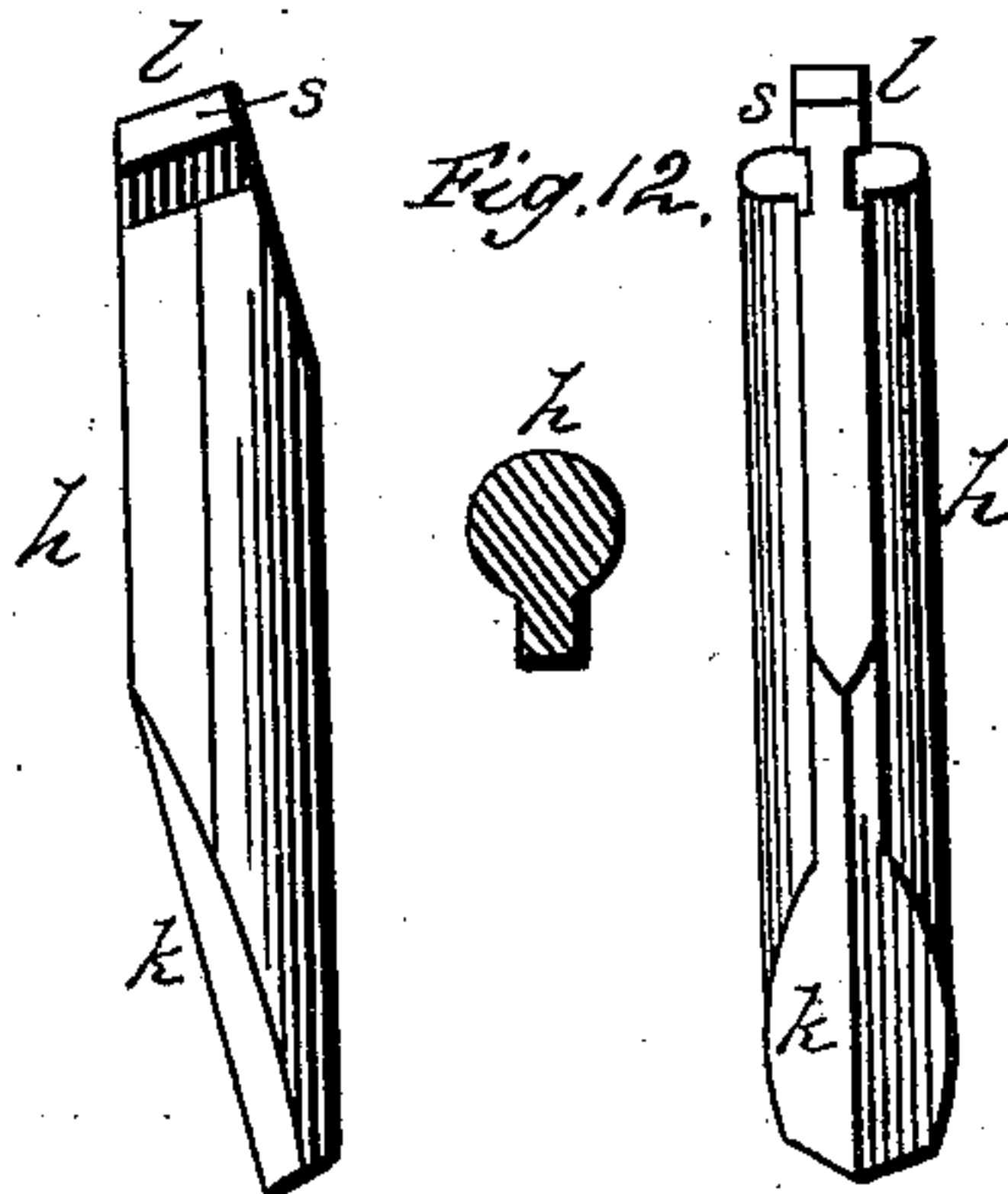
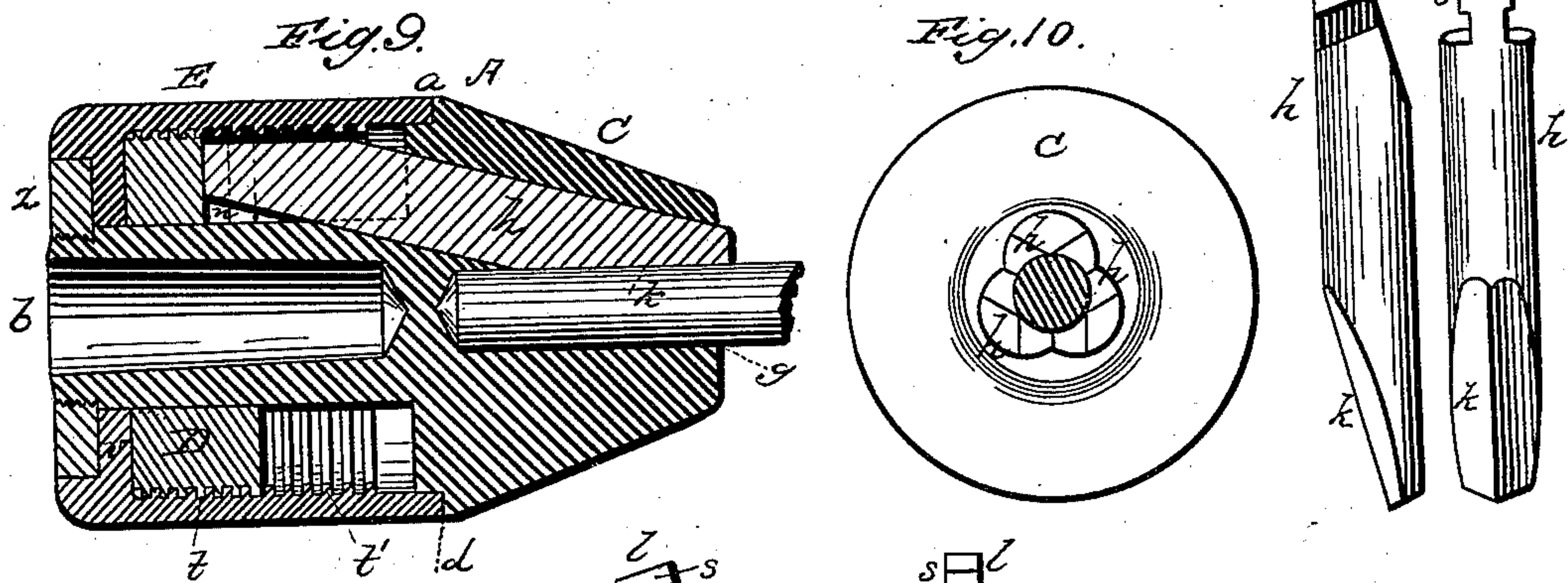
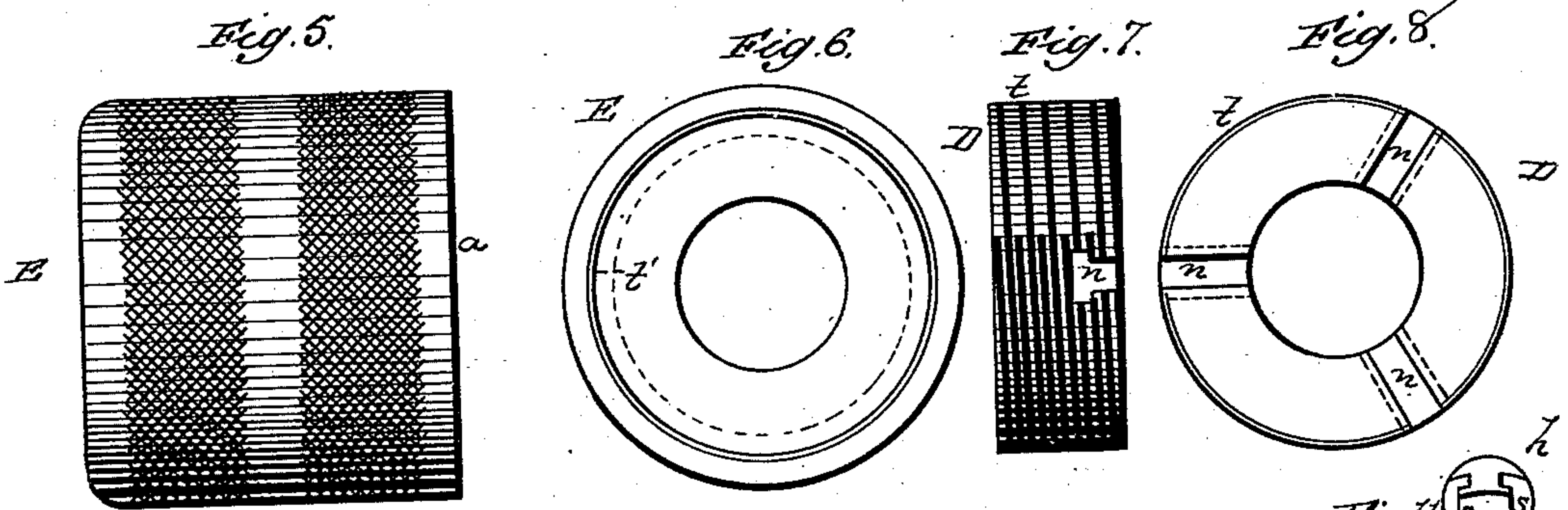
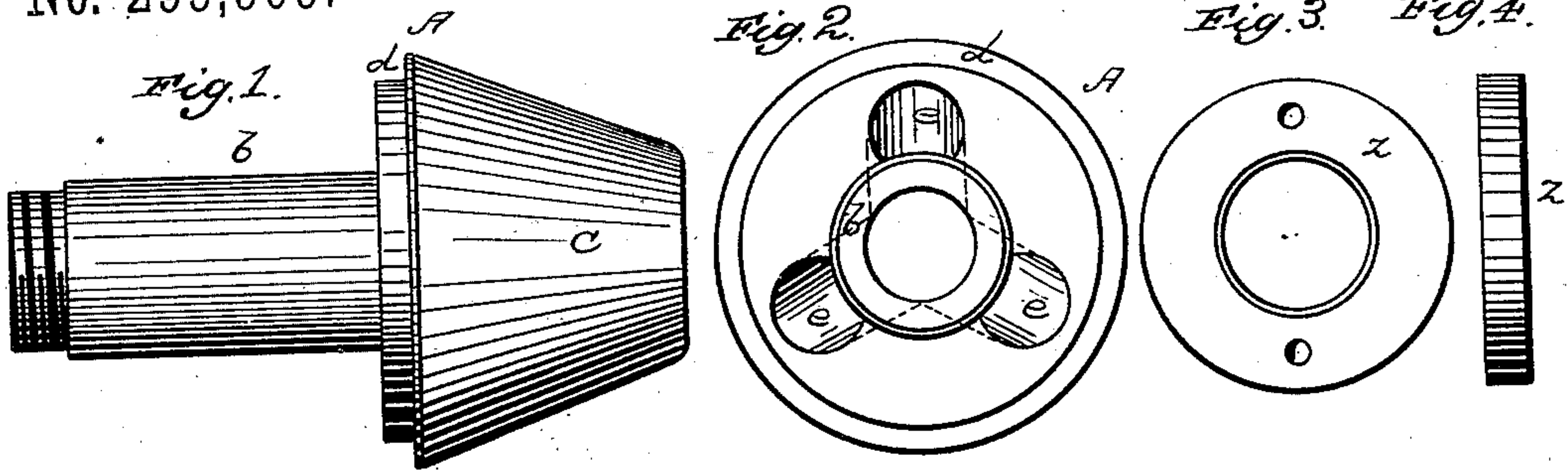


(No Model.)

C. E. CHURCH.  
DRILL CHUCK.

No. 299,909.

Patented June 3, 1884.



WITNESSES  
*E. H. Bates*  
*P. C. Masi.*

INVENTOR  
*C. E. Church,*  
*by Anderson & Smith*  
his ATTORNEYS



# UNITED STATES PATENT OFFICE.

CHARLES E. CHURCH, OF CLEVELAND, OHIO.

## DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 299,909, dated June 3, 1884.

Application filed December 7, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. CHURCH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Drill-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 letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of my chuck with nut E removed. Fig. 2 is a rear view of the same. Figs. 3 and 4 are detail views of the tightening-nut L. Fig. 5 is a side view of the nut E. Fig. 6 is a front view of the same. Figs. 7 and 8 are detail views of the ring D. Fig. 9 is a vertical sectional view of the chuck with all the parts applied. Fig. 10 is a front view of the same, and Figs. 11 and 12 are views of the jaws h.

This invention has relation to drill-chucks; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and particularly pointed out in the appended claim.

In the accompanying drawings, the letter A designates the body of the chuck, which is constructed with a stem, b, and solid front C, having a peripheral base-shoulder, d, and rounded converging guideways e, communicating in front with the central drill-seat, g. In the guideways e are seated the chuck-jaws h, which are of rounded form to fit the guideways. The front portions of the chuck-jaws are beveled on their inner faces to form bearings, as indicated at k, which engage the drill in the seat g. The rear end of each chuck-jaw is formed with a T-shaped lug, l, the head of which extends obliquely to the axis of the jaw, and, when the latter is in position in its guideway, at right angles to the axis of the chuck-body A.

D represents the annular pressure-head, which is seated by its central aperture on the stem b of the chuck-body, and is adjustable thereon by a sliding movement. This annular head or ring is constructed with radial

grooves n, enlarged back of their radial openings, to receive the headed or flanged lugs l of the chuck-jaws, the heads of the lugs being prevented from escaping from the grooves by the marginal flanges s of the walls of the latter. The grooves n are made open at the end, so that the lugs of the chuck-jaws can be readily engaged therewith. The outer cylindrical surface of the pressure head or ring D is threaded, as indicated at t, to engage the internal thread, t', of the operating-nut E, within the cavity of which the ring D is placed. The stem b of the chuck-body extends through a central aperture in the base of the nut E, which is secured in position to rotate on said stem by a tight nut, z, on the threaded end of the stem. The cylindrical front margin, a, of the nut E abuts and works against the circular base-shoulder d of the front C of the chuck-body, so that the relative position of the rotary operating-nut E and the chuck-body is fixed, while the said nut can be turned on the chuck-body in the circular direction. When the nut E is turned in one direction, the pressure-ring will be forced forward, causing the chuck-jaws connected therewith to forcibly engage the drill in the seat g. When the nut is turned in the opposite direction, the jaws will be drawn back, leaving the drill loose in the seat g and free to be removed. In some constructions the rounded chuck-jaw may be strengthened in the body portion thereof by forming in connection therewith an inner longitudinal flange.

A drill-chuck having a stem on which is formed a cylindrical head having its forward end beveled and provided with an axial hole and three inclined holes equidistant from each other, and having exactly the same inclination, so that their center lines meet the center line of the axial hole at the same point, has been provided with a space between the inclined hole and the axial hole to receive triangular wings upon cylindrical jaws fitting the inclined holes, and adapted to be operated by a threaded sleeve, to expand and contract the jaws to hold the object inserted in the axial hole. An operating-ring constructed with an internal screw and a nut formed with radial grooves has been used, in combination with a conical shell and sliding jaws, to hold drills,

wire, and other small articles; and I claim neither of these constructions, broadly.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

5 The chuck-body A, consisting of the head C, having the peripheral shoulder *d* and stem *b* made integral therewith, and provided with the converging guideways *e*, in combination  
10 with the internally-threaded nut E, having an inner annular flange, *v*, the externally-thread-

ed pressure-head D, provided with grooves *n* for the T-lugs *l*, the nut *z*, and the chuck-jaws *h*, beveled at *k*, and provided with the T-shaped lug *l*, all adapted to operate substan- 15 tially as and for the purposes specified.

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

CHARLES E. CHURCH.

Witnesses:

M. B. GARY,

HARRY L. VAIL.