

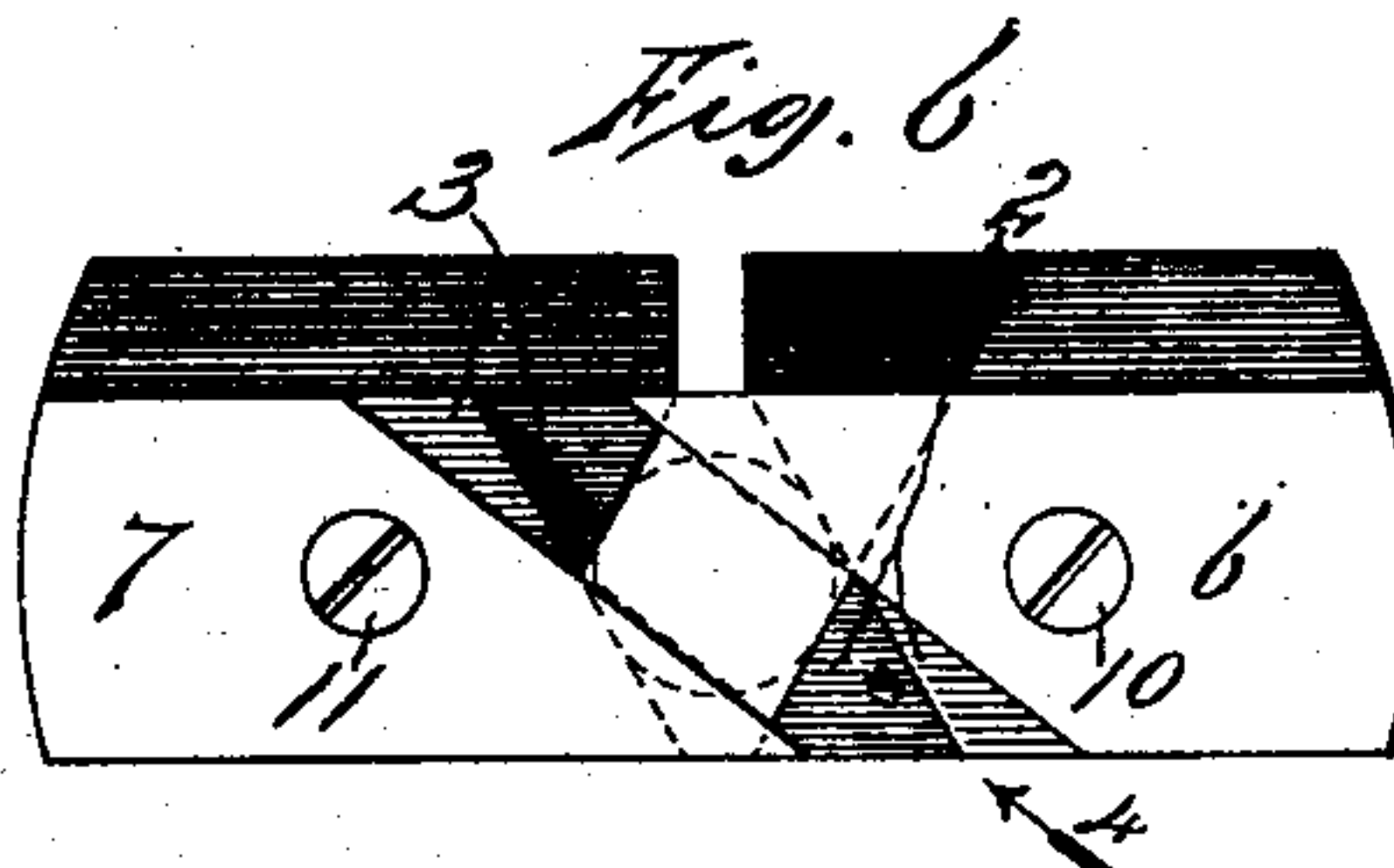
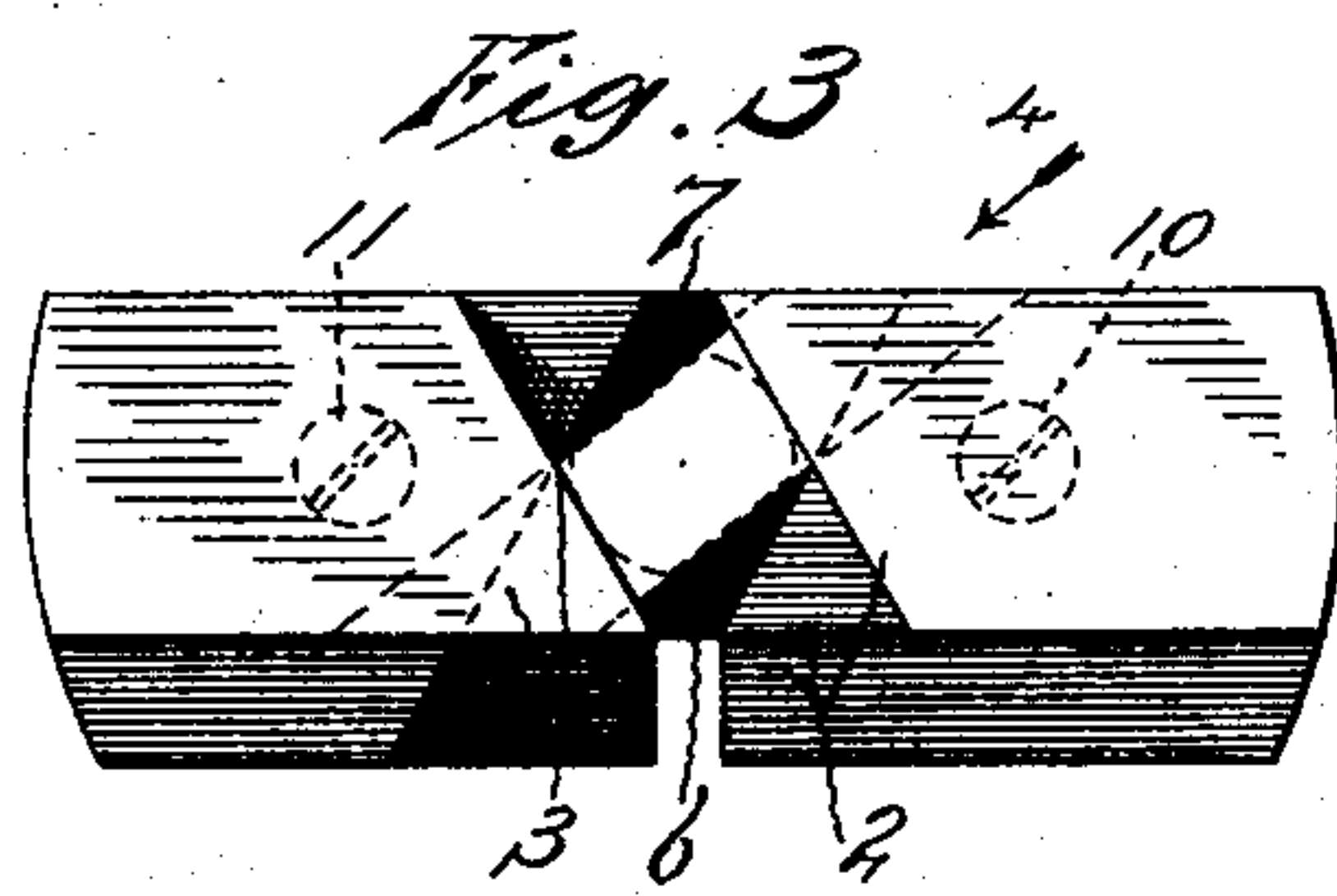
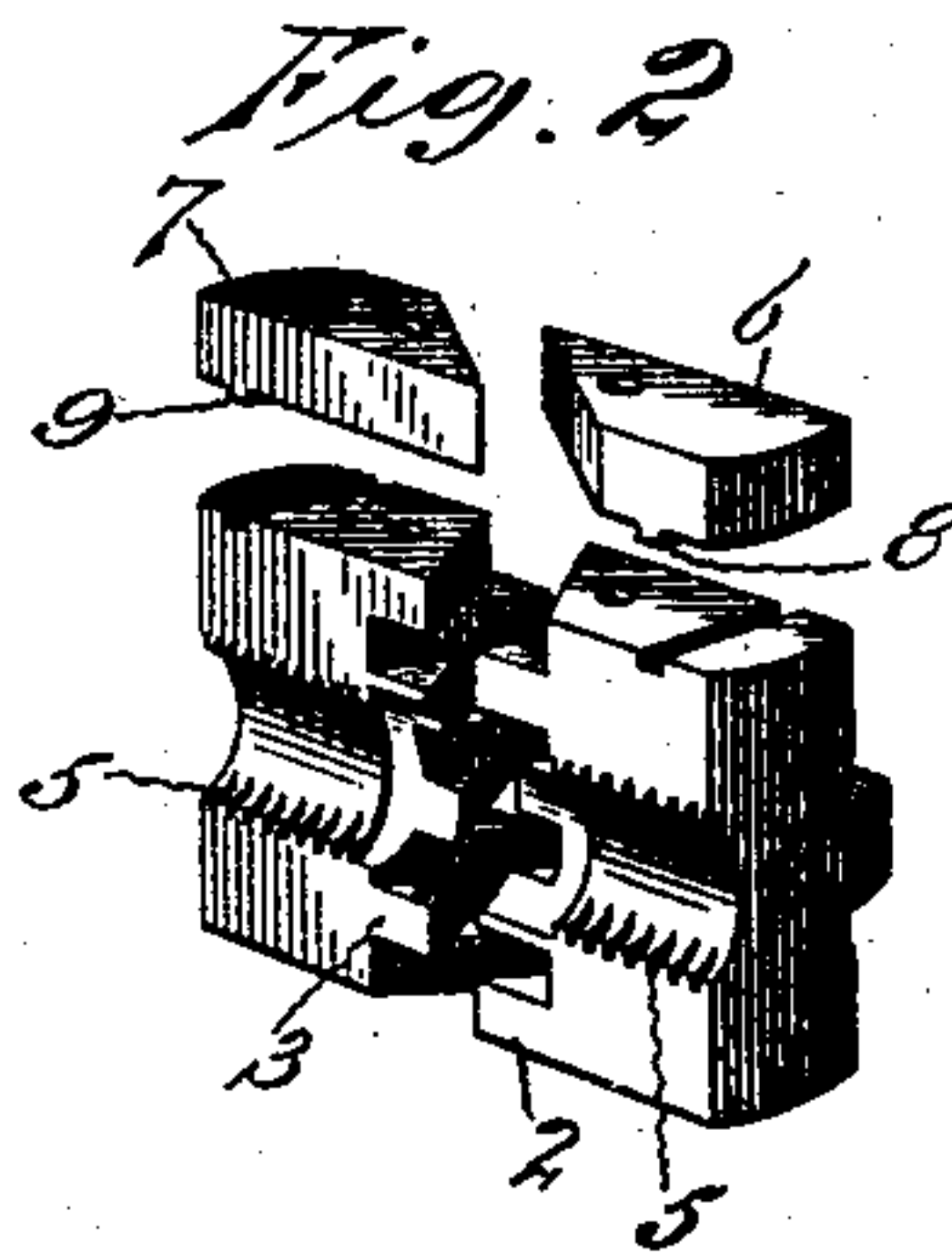
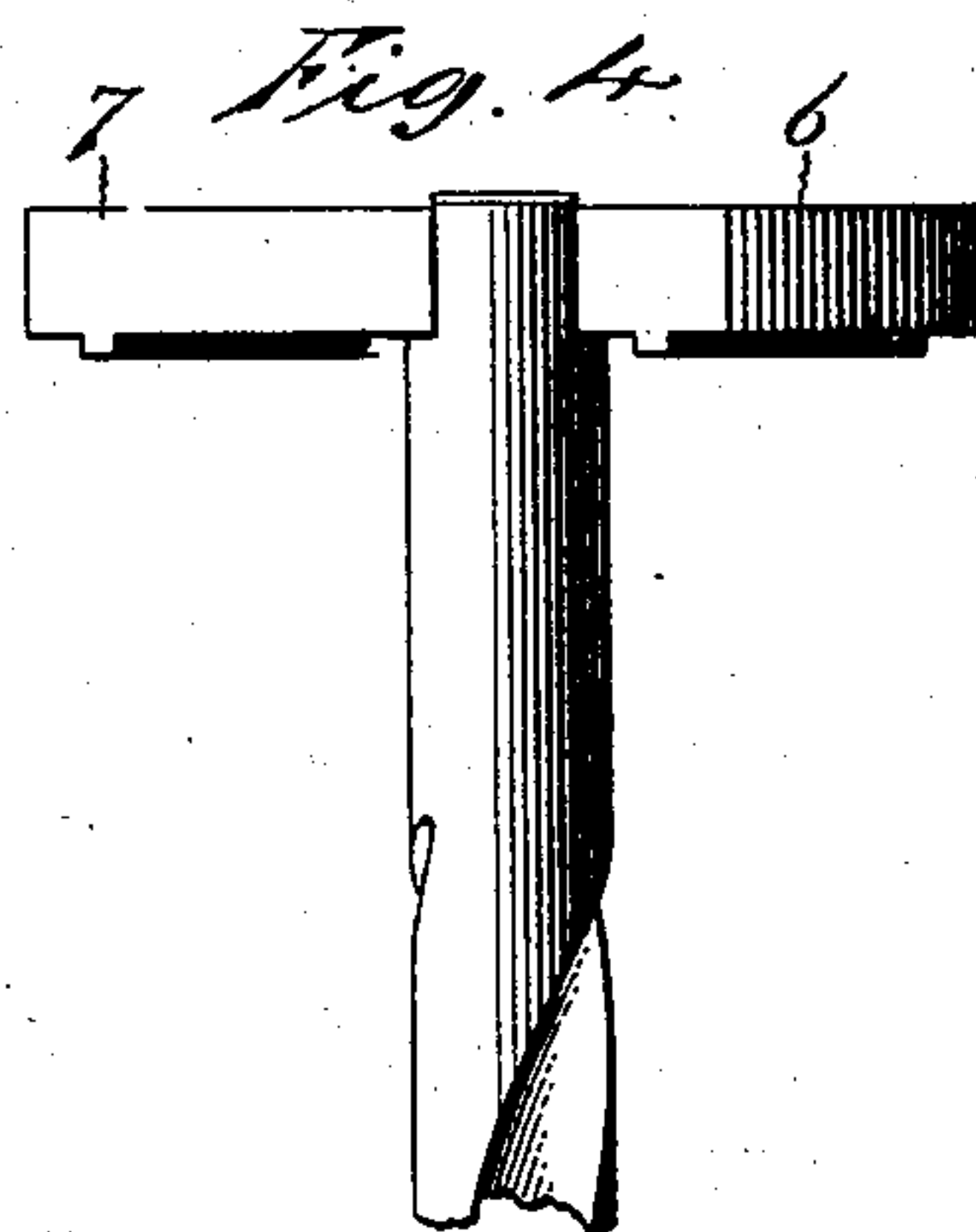
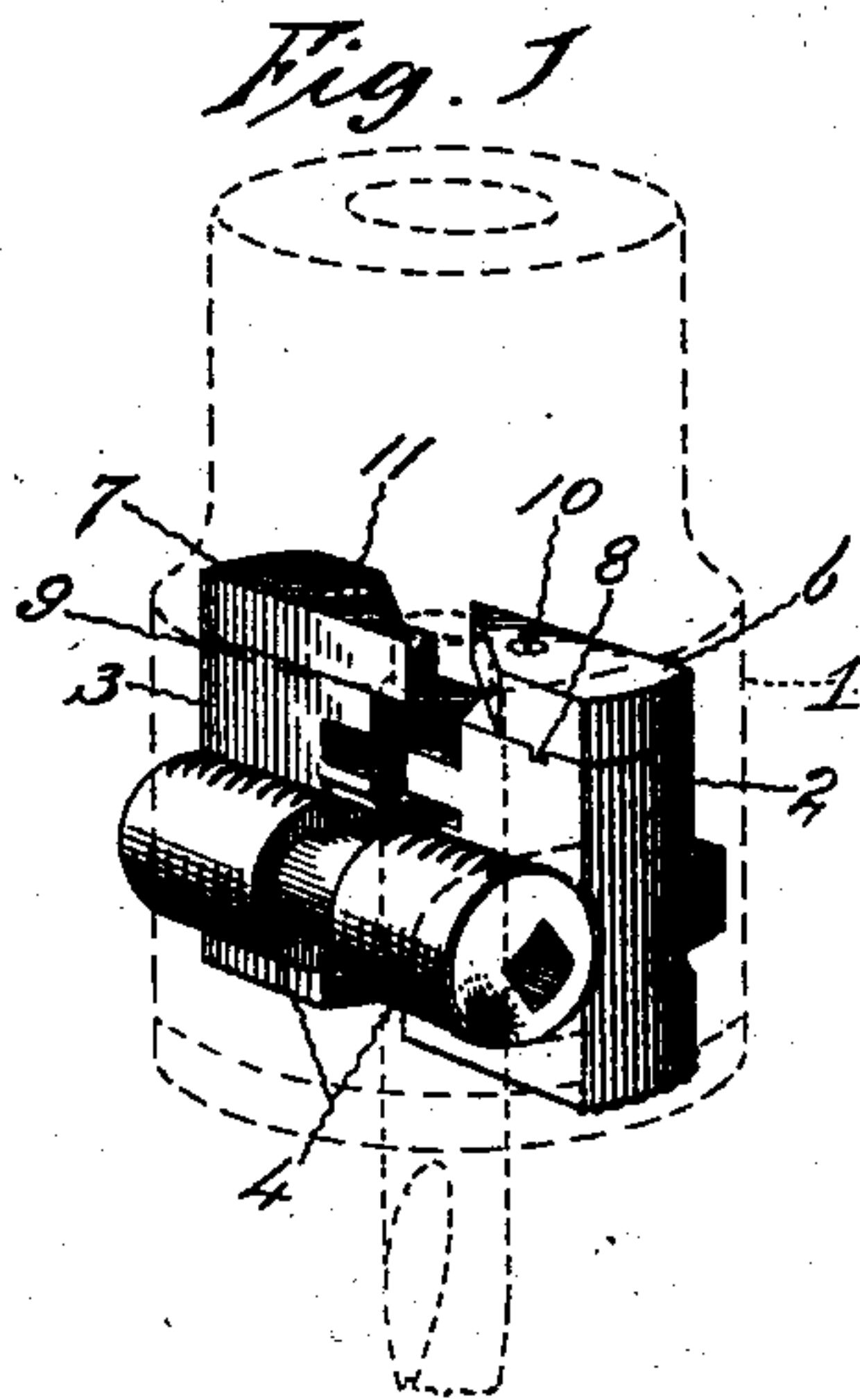
No. 721,753.

PATENTED MAR. 3, 1903.

E. J. SKINNER.
CHUCK.

APPLICATION FILED FEB. 12, 1901.

NO MODEL.



Witnesses
Luitgard A. Morka

Ch. Buckland

Inventor
Edward J. Skinner
By *Simonds & Hart*
Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD J. SKINNER, OF NEW BRITAIN, CONNECTICUT.

CHUCK.

SPECIFICATION forming part of Letters Patent No. 721,753, dated March 3, 1903.

Application filed February 12, 1901. Serial No. 47,017. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. SKINNER, a citizen of the United States of America, residing and having post-office address at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Chucks, of which the following is a specification.

The object of my invention is to improve the construction of chucks, especially as regards the gripping device for the tool.

My invention is applicable to chucks of any kind, but for convenience of illustration and description is shown as embodied in what is commonly known as a "drill-chuck," and has for its object to provide a positive gripping-jaw for the tool in connection with the usual frictional gripping-jaws.

My invention is fully illustrated in the drawings, in which—

Figure 1 is a perspective view of the parts assembled. Fig. 2 is a detail perspective view of the gripping-jaws. Fig. 3 is a view looking from the bottom of Figs. 1 and 2. Fig. 4 is a view of a form of tool-shank usable with my invention. Fig. 5 is a view of a partial radial section of the chuck-body with cap. Fig. 6 is an end view of the chuck-jaws, that end which is undermost in Fig. 1.

Referring to the drawings, 1 denotes the body of the chuck; 2 3, the frictional gripping and centering jaws located in an opening through the body of the chuck and adapted to be moved toward and away from each other by the right and left hand screw 4, threaded to engage the threads 5 on the jaws 2 3.

The gripping and centering devices shown are of the ordinary construction, comprising a series of projections preferably integral with the inner ends of but extending beyond the body portions of the jaws 2 and 3, those on one jaw being so disposed as to enter between those on the other jaw when the two jaws come together. To this extent the construction of these projections is that ordinarily followed in chucks of this character, their working faces being alternately reversed, as shown in the drawings. This construction provides frictional gripping-jaws, which in ordinary cases are sufficient to hold the tool; but in many cases when excessive

strains are brought to bear on the tool this frictional grip is not sufficient to hold it.

By my invention I provide in connection with these frictional gripping-jaws an adjustable positive grip for the end of the tool, so that no matter what strain is put on the tool it is held absolutely against a relative movement with relation to the chuck. I accomplish this by securing plates 6 7 to the jaws, as by means of the transverse tongues and splines 8 9 and the screws 10 11 or in any other convenient manner. The working faces of these plates are on their inner ends and are arranged parallel to each other, but at a different angle to the sides of the plate than the angle which the projections make with the sides of the jaws. The tools which are used with my improved chucks are to be slabbed off on two sides, as shown in Fig. 4, and in practice that portion of the tool thus flattened always bears the same relative proportion in thickness to the diameter of the round body thereof.

The operation of the device is apparent, the tool being inserted between the jaws and turned until its flattened end fits between the working faces of the plates 6 7. The jaws are then brought together by the screw 4, the working faces of the projections frictionally gripping the shank of the tool and the working faces of the plates 6 7 positively gripping the end of the tool. The positive gripping-jaws will drive the tool, even though it be somewhat loose, in the frictional gripping-jaws.

I am aware that chucks have been made in which a slotted plate is located at the inner end of the jaws and the end of the tool slabbed off to fit into said slot; but it is evident that by such a construction all sizes of drills must be cut down to fit the slot, which must be small enough to take the reduced end of the smallest-size tool. For this reason the larger tools, which are mostly in need of a positive drive, are unnecessarily weakened. It will be seen that by my construction the positive gripping-jaws are adjustable, and on drills of large sizes the ends need be reduced only enough to give flat bearing-surfaces to be engaged by these jaws.

It is evident that this invention can be ap-

plied to the well-known scroll-chucks equally
as well as to the class shown in the drawings
and that alterations and modifications can be
made in the shape and number of the parts
5 without departing from the spirit of my in-
vention.

I claim as my improvement—

The combination in a chuck, with the body,
and positive gripping devices; of frictional
10 gripping-jaws whereon the positive gripping
devices are supported, grooves and splines
connecting the frictional and positive mem-

bers in pairs and standing at right angles to
their lengths, and means for moving said fric-
tional jaws toward and from each other, all 15
working faces being on the inner ends of their
members and standing at oblique angles to
the sides thereof and those on the positive de-
vices standing at different angles from those
on the frictional jaws.

EDWARD J. SKINNER.

Witnesses:

C. E. BUCKLAND,

LUITGARD A. MORBA.