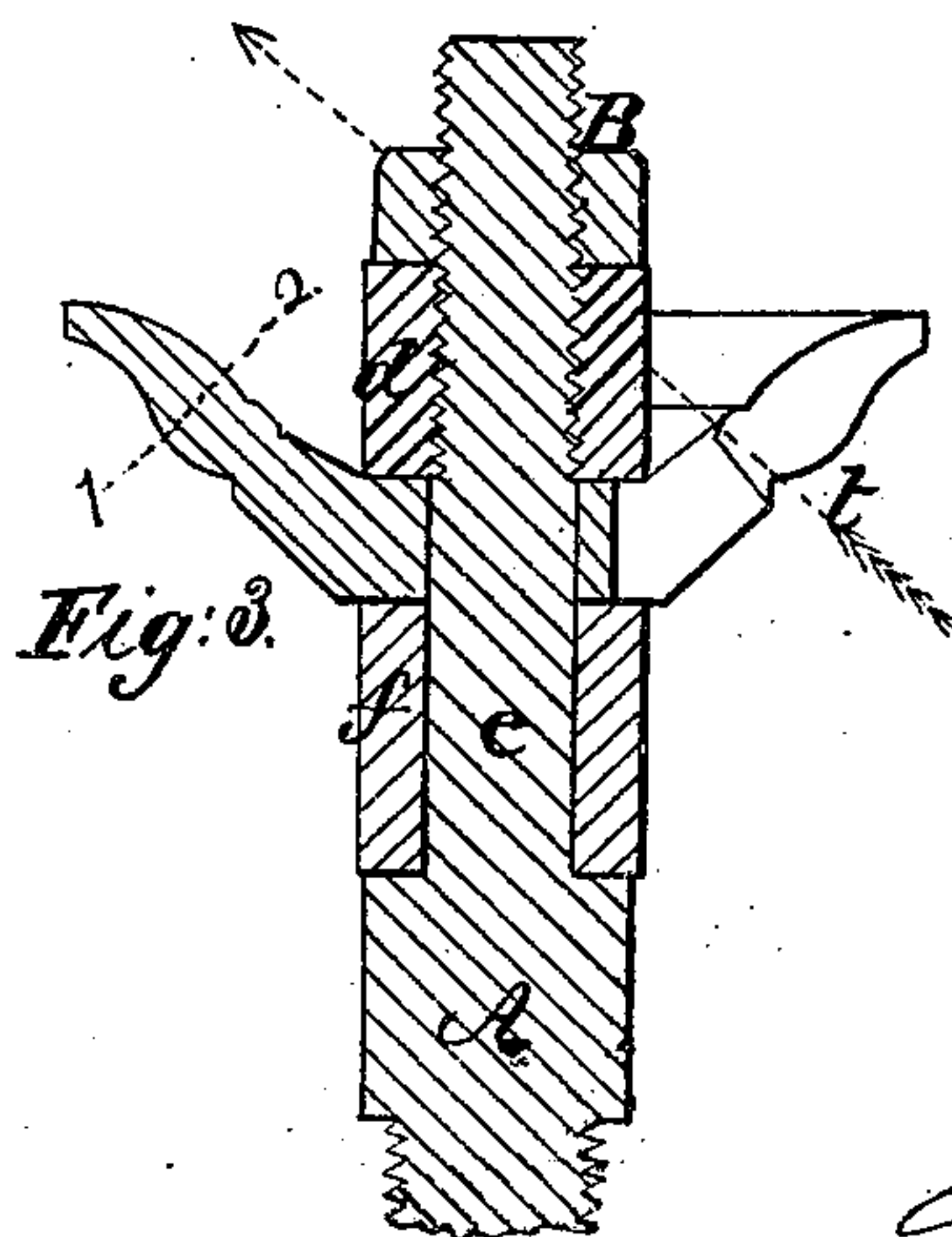
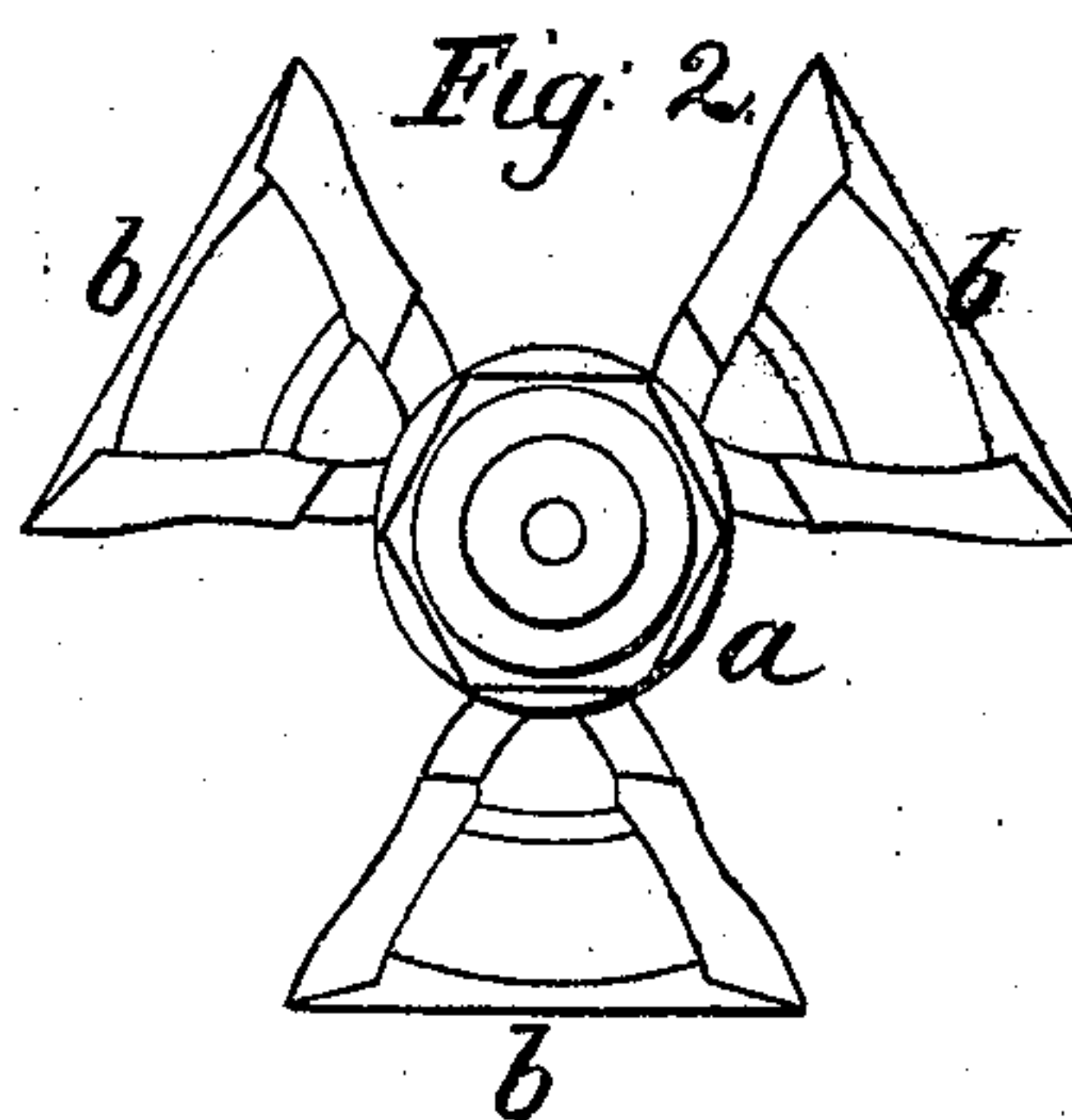
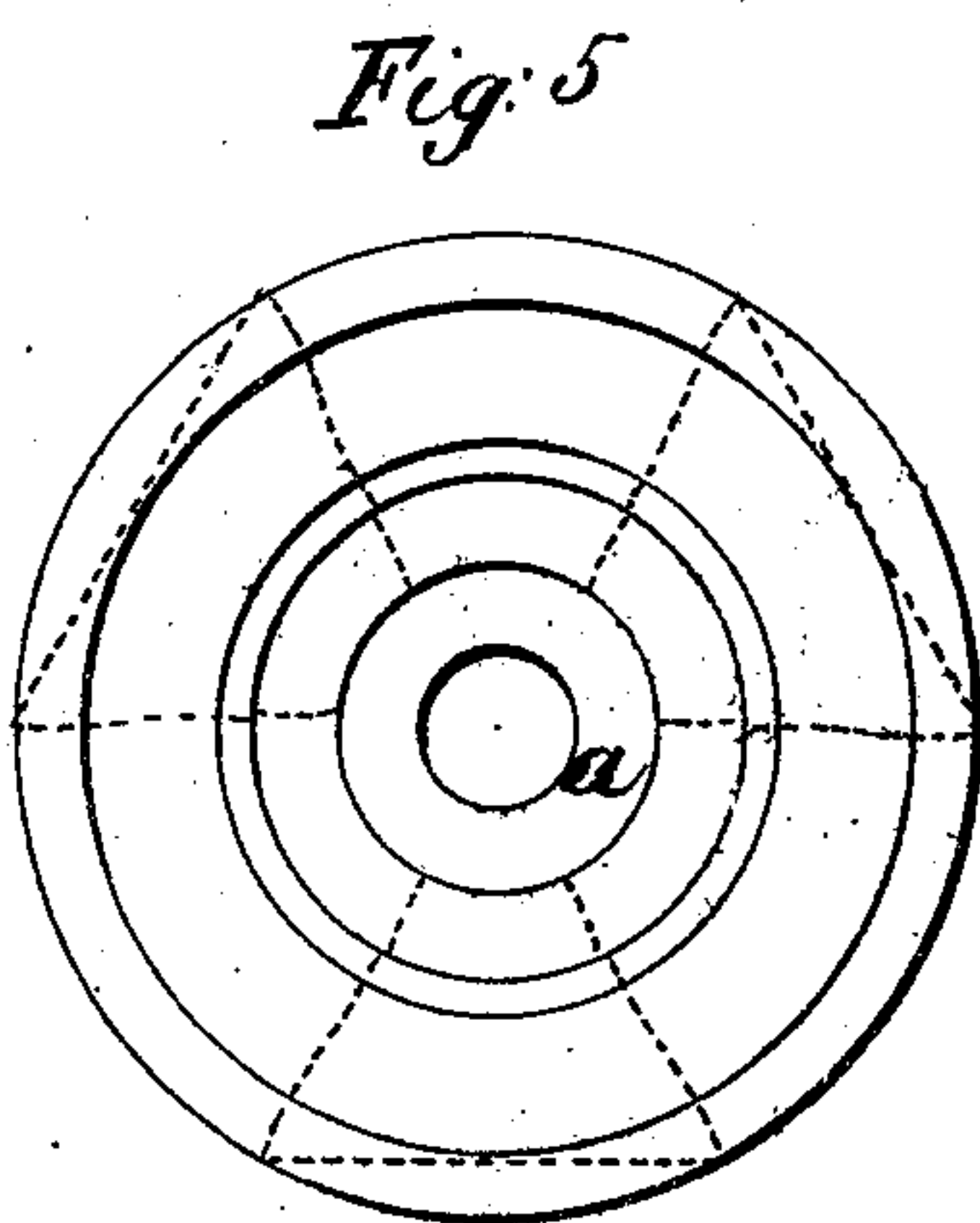
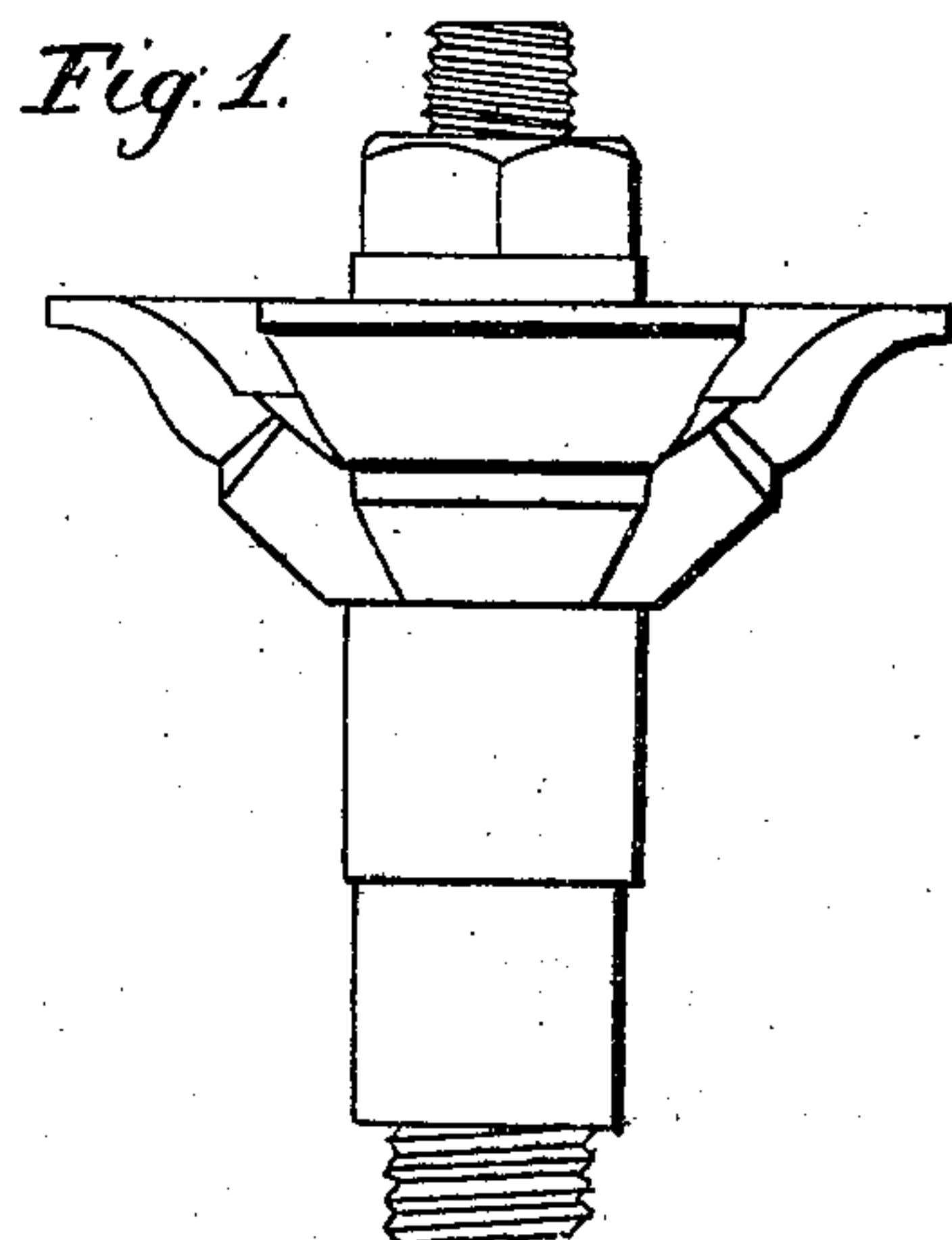
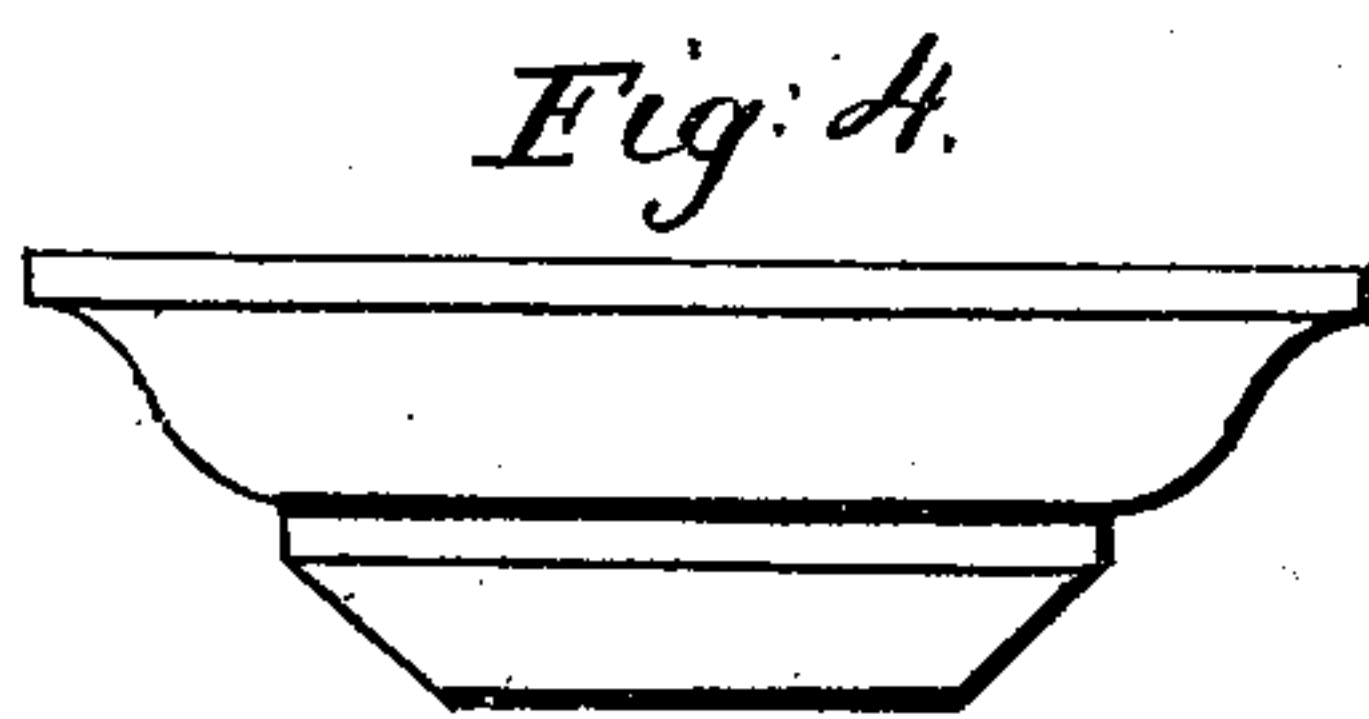


D. Mc. Kinley.
Rotary Cutter for Planing Mach.
N^o 38712. Patented May 26. 1863



Witnesses;
W. Albert Steel
Charles E Foster.

Inventor;
Henry Rowson.
Atty for D Mc Kinley.

UNITED STATES PATENT OFFICE.

DAVID McKINLEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND CHARLES H. MELLOR, OF SAME PLACE.

IMPROVED ROTARY CUTTER FOR PLANING-MACHINE.

Specification forming part of Letters Patent No. 38,712, dated May 26, 1863.

To all whom it may concern:

Be it known that I, DAVID McKINLEY, of Philadelphia, Pennsylvania, have invented an Improved Rotary Cutter for Planing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in that class of rotary-cutters used for forming moldings, &c.; and my improvement consists of a cutter formed from a steel block or disk having a concavity or recess and having portions cut away, so as to leave two or three or more cutting arms and open spaces between the said arms, said open spaces communicating with the concavity or recess, all substantially as described hereinafter, so that the cutting-edges may be effectually cleared from the shavings, and so that said edges can be readily sharpened.

In order to enable others to make my invention, I will now proceed to describe the manner of constructing the same.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is an exterior view of my improved cutter for planing-machines; Fig. 2, a face view of the cutter; Fig. 3, a sectional view; Fig. 4, an edge view of the steel disk from which the cutter is formed; Fig. 5, a face view of Fig. 4; Fig. 6 a transverse section of one of the arms of the cutter through the line 1 2, Fig. 3.

Similar letters refer to similar parts throughout the several views.

A is the rotating spindle, to which is attached the cutter for imparting the desired form to moldings and other wooden objects.

In constructing my improved cutter, I, in the first place, take a block of steel and turn it on the outside to the form of the molding which has to be cut—as, for instance, the form represented in Fig. 4. I then turn it out on the inside, so as to form a concave recess by which the steel is made as thin as possible consistent with appropriate strength. I then cut from the outer edge of the disk to the central hub *a*, two, three, or more portions, (three portions being cut away in the present instance, as indicated by the red radial lines, Fig. 5.) The piece of steel has now assumed the form represented in Figs. 1 and 2, and consists of a

central hub, *a*, with three arms, *b b b*, to be converted into cutters by being beveled from the inside and reduced to sharp cutting-edges which have the desired form of the molding. The form of each arm at this stage in the construction of the cutter will be best understood by referring to the transverse section, Fig. 6, the arm being concave on the inside and convex on the outside. The convexity of the exterior is, however, removed by filing or otherwise, as represented by the line *x x*, Fig. 6. The cutter is then secured to that portion *c* of the spindle which is reduced in diameter by means of a nut, B, adapted to the screwed end of the spindle and by such washers or sleeves *d* and *f* as may be deemed necessary, care being taken to make the nuts and washers as small in diameter as circumstances will permit.

Ordinary rotary-cutters are made of a solid disks of steel turned on the outside, but having no recesses on the inside, notches being cut in the solid disk in such a manner as to form the necessary beveled cutting-edges. The great objection to this class of cutters is the difficulty of effectually cleansing them from shavings which are apt to be retained in the notches cut in the solid metal, the cutting-edges consequently become heated, their temper is destroyed, and frequent stoppages of the planing-machine for the purpose of sharpening or replacing these solid cutters are unavoidable.

The concave recess in the steel disk from which my improved cutter is formed affords ample space for the dispersion of the shavings clear of the cutting-edges. The shavings from the cutting-edge *t*, Fig. 3, for instance, will naturally be propelled in the direction of the bevel of that edge, clear of the end of the spindle, its nut B, and washer *d*, the spaces between the cutting-arms *b b b* affording ample openings for the free escape of the shavings.

Another advantage of the concavity of the steel disk from which my improved cutter is formed is the facility which the said recess and open space between the cutting-arms affords for sharpening the cutting-edges, as an oil-stone of limited dimensions, held in the position indicated by the arrow, Fig. 3, can be readily applied to the cutting-edges.

A further advantage of the concave recess

in the steel disk is the reduction of the metal in thickness, a beveled edge of thin steel making a much cleaner cut than a beveled edge of thick steel, even though the angle of the edge be the same in both.

I claim as my invention and desire to secure by Letters Patent—

The rotary cutter formed from a steel block or disk having a concavity or recess and having portions cut away so as to leave two, three, or more cutting-arms and open spaces between

the said arms *b*, the said spaces communicating with the recess, all substantially as set forth, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAV. McKINLEY.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.