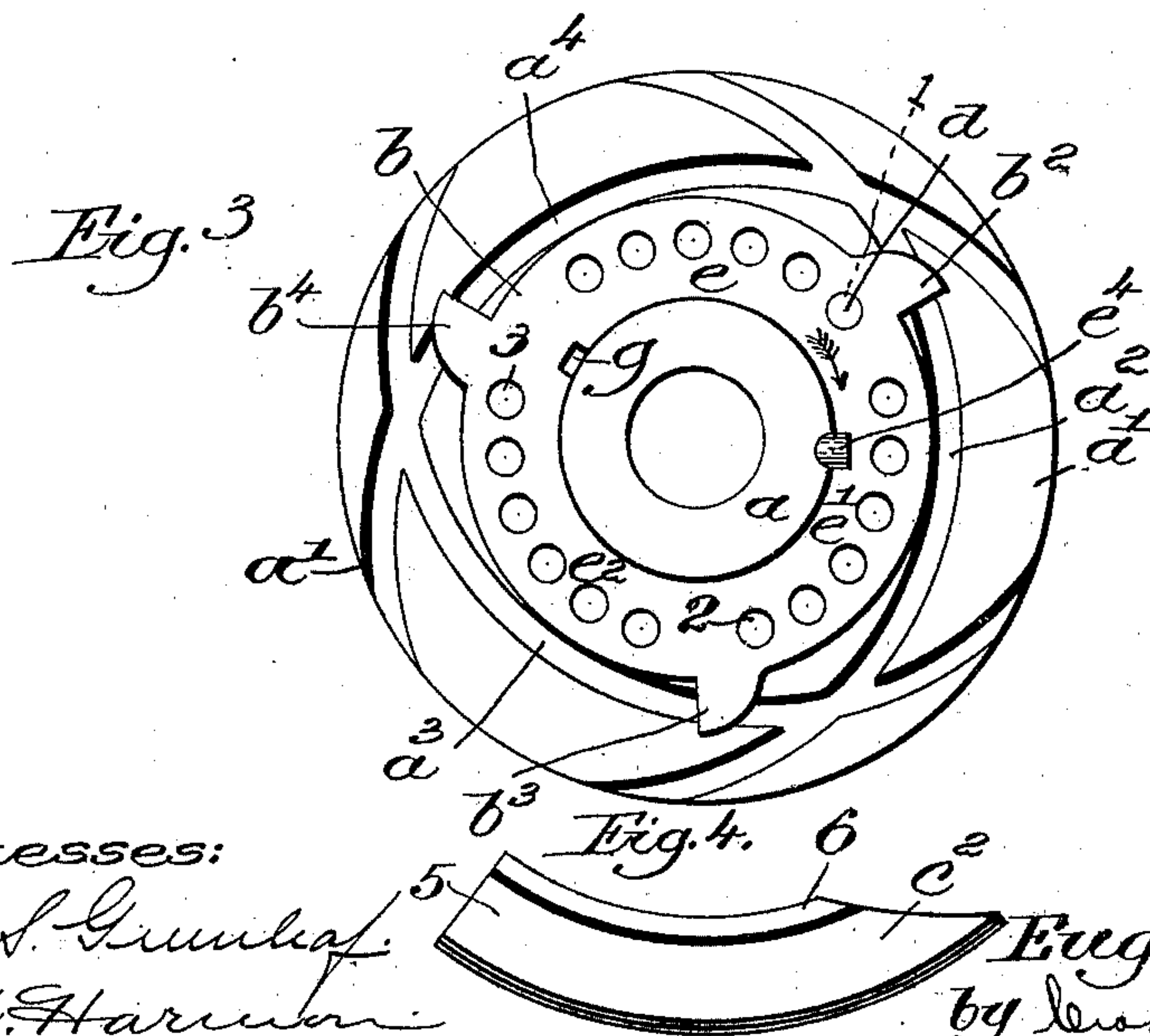
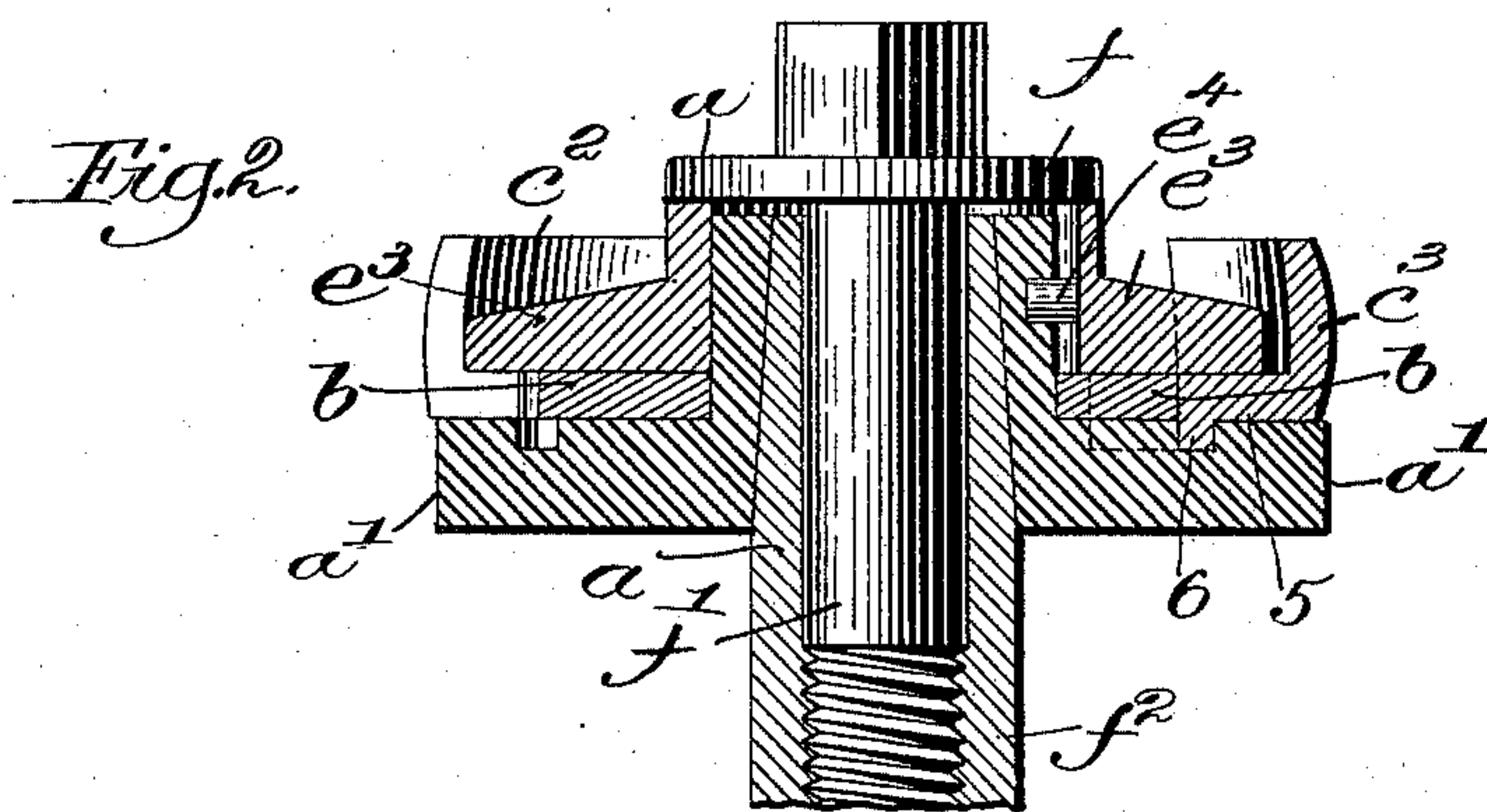
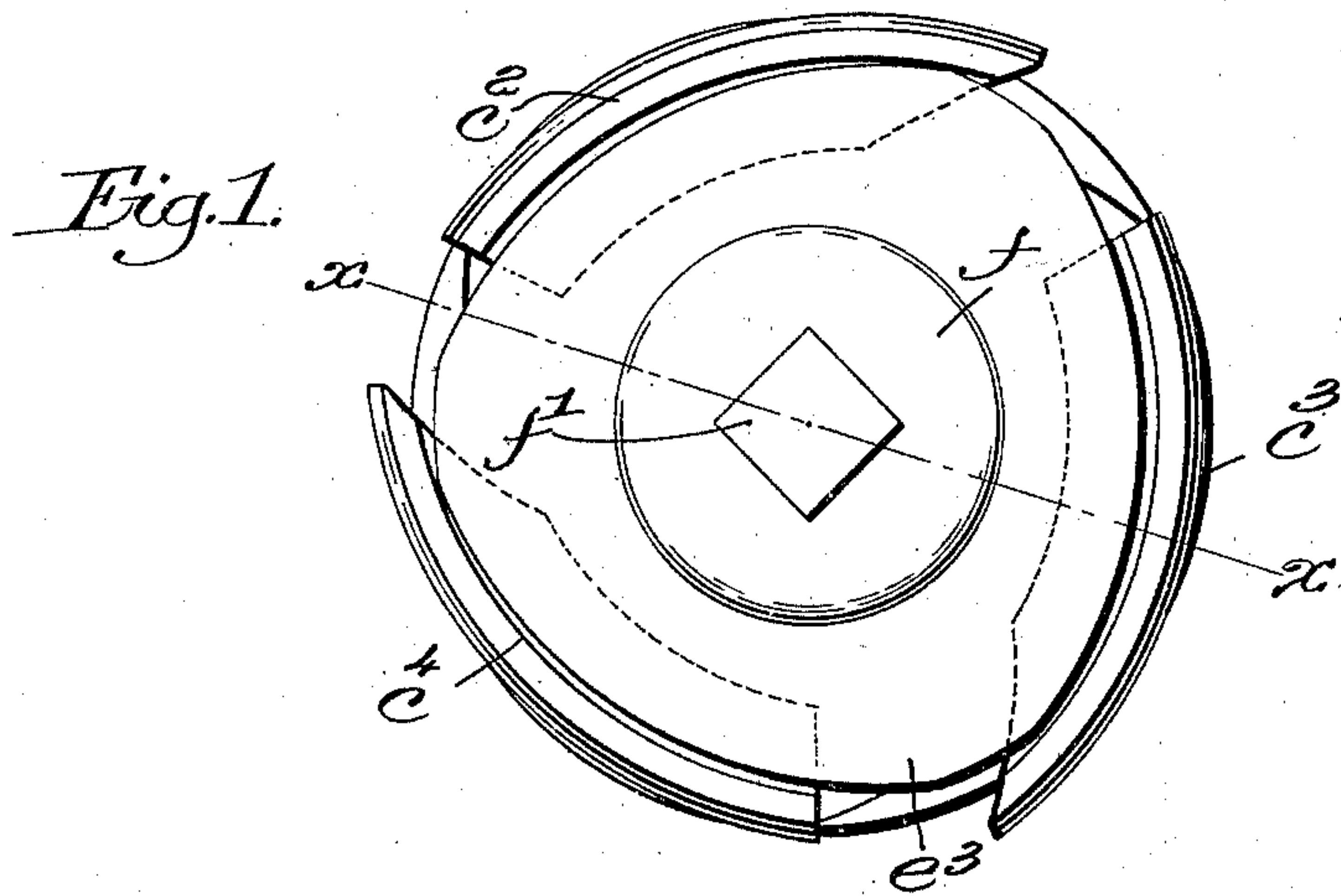


(No Model.)

E. CHILDS.  
ROTARY CUTTER FOR LEATHER WORK.

No. 604,002.

Patented May 10, 1898.



witnesses:

Fred S. Grunkef.

A.C. Harmon

*Fig. 4.*

Inventor

Eugene Childs.

by Lewis Gregory  
attys.



# UNITED STATES PATENT OFFICE.

EUGENE CHILDS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE TRIMONT MANUFACTURING COMPANY, OF PORTLAND, MAINE.

## ROTARY CUTTER FOR LEATHER-WORK.

SPECIFICATION forming part of Letters Patent No. 604,002, dated May 10, 1898.

Application filed August 27, 1897. Serial No. 649,719. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE CHILDS, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Rotary Cutters for Leather-Work, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object the production of a novel rotary cutter chiefly for use in connection with boot and shoe work.

My improved cutter is composed of a head and a plurality of curved blades, each blade  
15 consisting of a curved body, a connected substantially right-angled foot or base extended therefrom, and a rib extended from said foot or base at right angles, said rib entering a suitable eccentric groove in the face of the head,  
20 said ribs being kept seated in said grooves, preferably by a suitable clamping-plate, it acting on each foot or base resting against the face of the head. I have also added to the face of the head a ring having a series of stops  
25 for the heels of the blades, said ring, with its stops, being readily adjustable as to its position on the said head, to thus place the stops all at a uniform distance from the open ends of the grooves in which the said ribs stand,  
30 to thereby insure that the heels of all the blades may occupy the same position relatively to the periphery of the head, so that the clearance of blades of the same length may be readily insured. This ring is adjustable to compensate for grinding the cutting  
35 edges of the blades back and to insure uniformity of clearance for the blades.

Figure 1, in front elevation, shows a rotary cutter embodying my invention; Fig. 2, a section thereof in the dotted line  $x$ , Fig. 1; Fig. 40 3, a view of the face of the head and its adjustable ring, and Fig. 4 shows an under side view of one of the blades.

The head is composed, essentially, of a hub  
45  $a$  and an extended disk  $a'$ , provided with a series of circular but eccentric crossing grooves  $a^2 a^3 a^4$ , each groove being herein shown as crossing both of the other grooves, as in Fig. 3.

The hub  $a$  is surrounded loosely by a blade-  
50 positioning ring  $b$ , having a series of stops  $b^2 b^3 b^4$ , said ring being adjustable about said

hub, so as to put said stops in new or changed positions to act as stops for the inner or heel ends of the blades  $c^2 c^3 c^4$ , said stops, as herein shown, standing at all times across some part  
55 of the grooves  $a^2 a^3 a^4$ . The ring has three series of holes  $e e' e^2$ , as herein shown, six holes in each series, each series cooperating with its own stop. The head has extended from its face a stud  $d$ .  
60

The holes of each series of holes may be and are shown as equidistant one from the other, but the center of the leading hole 1 of the series of holes  $e$  is nearer the stop  $b^2$  than the center of the leading hole 2 of the series  
65  $e'$  to the stop  $b^3$ , and the center of the leading hole 3 of the series  $e^2$  is yet farther from the stop  $b^4$  than the center of the leading hole 2 of the series of holes  $e'$  from the stop  $b^3$ . From the location of these different or plurality of  
70 series of holes with relation to the acting shoulders of the stops of the ring it will be seen that very minute adjustments of the stops may be made to provide for the gradual adjustment of the blades, to thereby keep the  
75 cutting edges of the blades always in the same relative position with relation to the periphery of the face or flange  $a'$  necessitated by the gradual reduction in the length of the blades by grinding the same, and in practice  
80 let us suppose that when the cutters are new and of full length, the first hole 1 of the series of holes  $e$  is on the pin  $d$ . After the first grinding the ring may be withdrawn from the pin  $d$  and turned in the direction of the  
85 arrow until the first hole 2 of the series  $e'$  is brought into position to fit over the said stud  $d$ , this being the second adjustment of the ring. The third adjustment to follow a second grinding will be that wherein the said  
90 pin  $d$  enters the first hole 3 of the series of holes  $e^2$ . In this way after successive grindings of the blades the pin  $d$  may be made to enter one after the other the several holes of the several series of holes.  
95

The blades  $c^2 c^3 c^4$ , all alike, have each a suitable foot or base, as 5, extended laterally from one of the side edges of the blades, and these feet have each a like rib 6 extended therefrom, said ribs entering the open ends  
100 of the grooves  $a^2 a^3 a^4$ , the heels of said blades meeting one or the other of the said stops,



the feet of said blades resting against the face of the said flange  $a'$ .

The feet of the blades seated against the face of the flange  $a'$  are acted upon by, as herein shown, a ring-clamp  $e^3$ , surrounding the hub  $a$  and splined thereon by a spline  $e^4$ , the clamp being acted upon and kept in firm holding position by the collar  $f$  of a screw  $f'$ , engaging screw-threads at the interior of the usual tapered shaft  $f^2$ .

The periphery of the clamp is herein shown as defined by the arcs of three different circles, and said periphery terminates at such a distance from the inner sides of the blades (see Figs. 1 and 2) as to leave a suitable space for the trimmings of leather to enter and work out of the face of the rotary cutter.

The inner edges of the ring  $b$  has a notch  $g$  (see Fig. 3) to let the ring pass the spline  $e^4$  when going into position at the face of the cutter-head.

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

1. A rotatable cutter-head composed of a flange or face having a plurality of eccentric crossing grooves; a plurality of cutter-blades each having a foot extended from its side substantially at right angles, each foot having a rib to enter one of said grooves; and means to clamp said feet closely to the face of the said head, substantially as described.

2. A rotatable cutter-head composed of a flange or face having a plurality of eccentric crossing grooves; a plurality of cutter-blades having each a foot extended from its concaved side, substantially at right angles, each foot having a rib to enter one of said grooves; means to clamp said feet closely to the face of the said head; and an adjustable ring having a plurality of stops to coöperate with the heels of and position the blades, substantially as described.

3. A rotatable cutter-head composed of a flange or face having a plurality of eccentric crossing grooves; a plurality of cutter-blades

having each a foot extended from its side substantially at right angles, each foot having a rib to enter one of said grooves; means to clamp said feet closely to the face of the said head; an adjustable ring having a plurality of stops, and a plurality of series of holes, the holes of each series of holes in the ring occupying varying positions with relation to said stops; and a device to hold the said ring in working position, whereby very minute adjustments of the cutter-blades may be gained, substantially as described.

4. A series of cutter-blades having each a foot extended inwardly therefrom, said foot having a concavo-convex rib extending from it at its edge opposite the blade and in a direction opposite said blade, combined with a head to clamp and carry said cutter-blades, the ribs of said blades entering a series of eccentric grooves and being adjustable therein, substantially as described.

5. The herein-described cutter, it presenting a longitudinally concavo-convex blade having extended inwardly from its concaved side a foot, the said foot at its edge opposite said blade having extended from it in a direction opposite the direction of said blade a narrow concavo-convex rib, said rib being equidistant throughout from the said blade, substantially as described.

6. In a rotary cutter, a plurality of blades, and means to hold said blades in position, combined with a stop-ring provided with a series of holes and stops by which to secure proper adjustments of said blades and means coöperating with said holes to enable said ring to be held in its adjusted position, substantially as described.

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

EUGENE CHILDS.

Witnesses:

GEO. W. GREGORY,  
FREDERICK L. EMERY.