

(No Model.)

M. T. HARRIGAN.

ROTARY CUTTER.

No. 386,538.

Patented July 24, 1888.

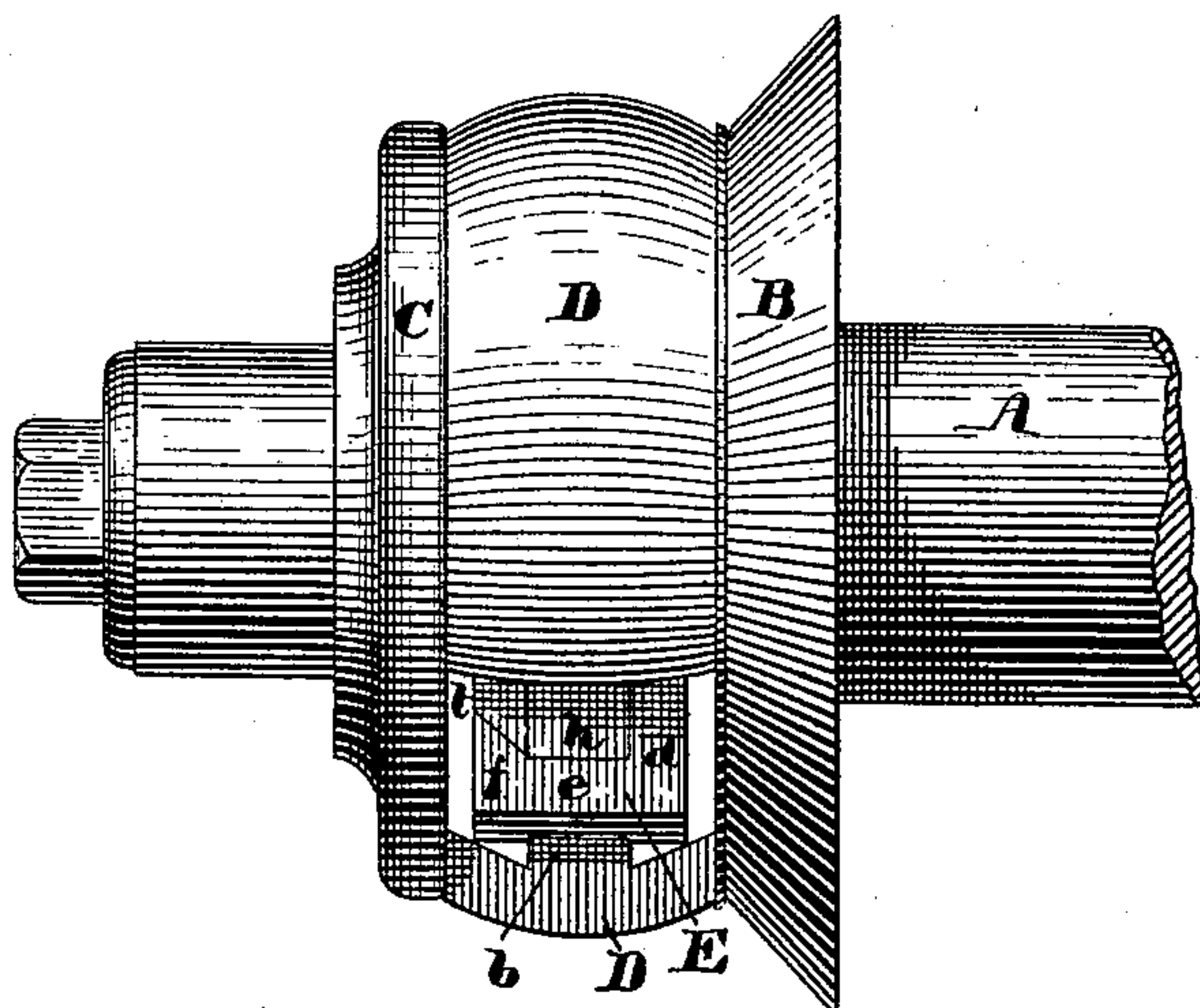


Fig. 1.

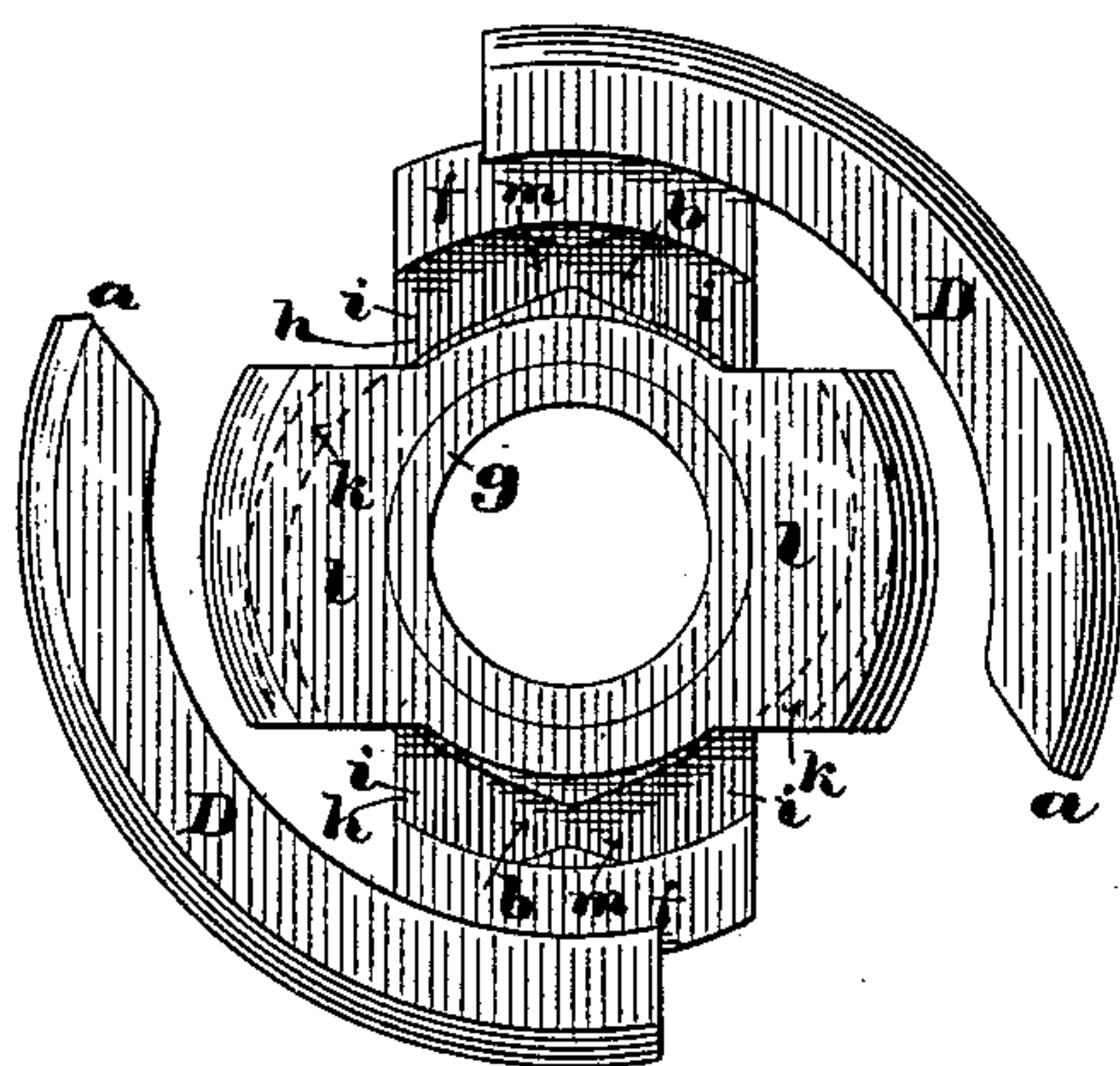


Fig. 2.

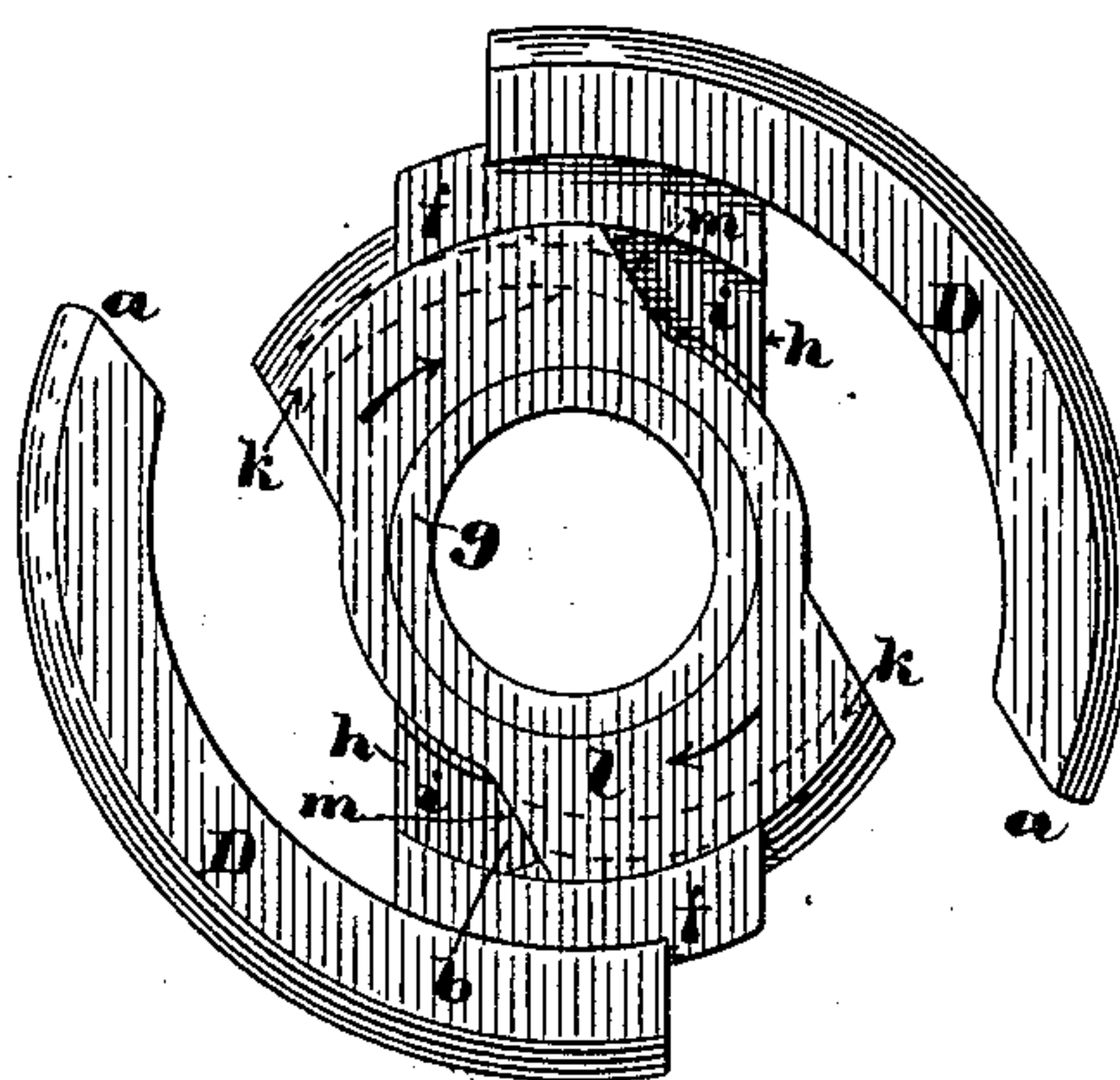


Fig. 3.

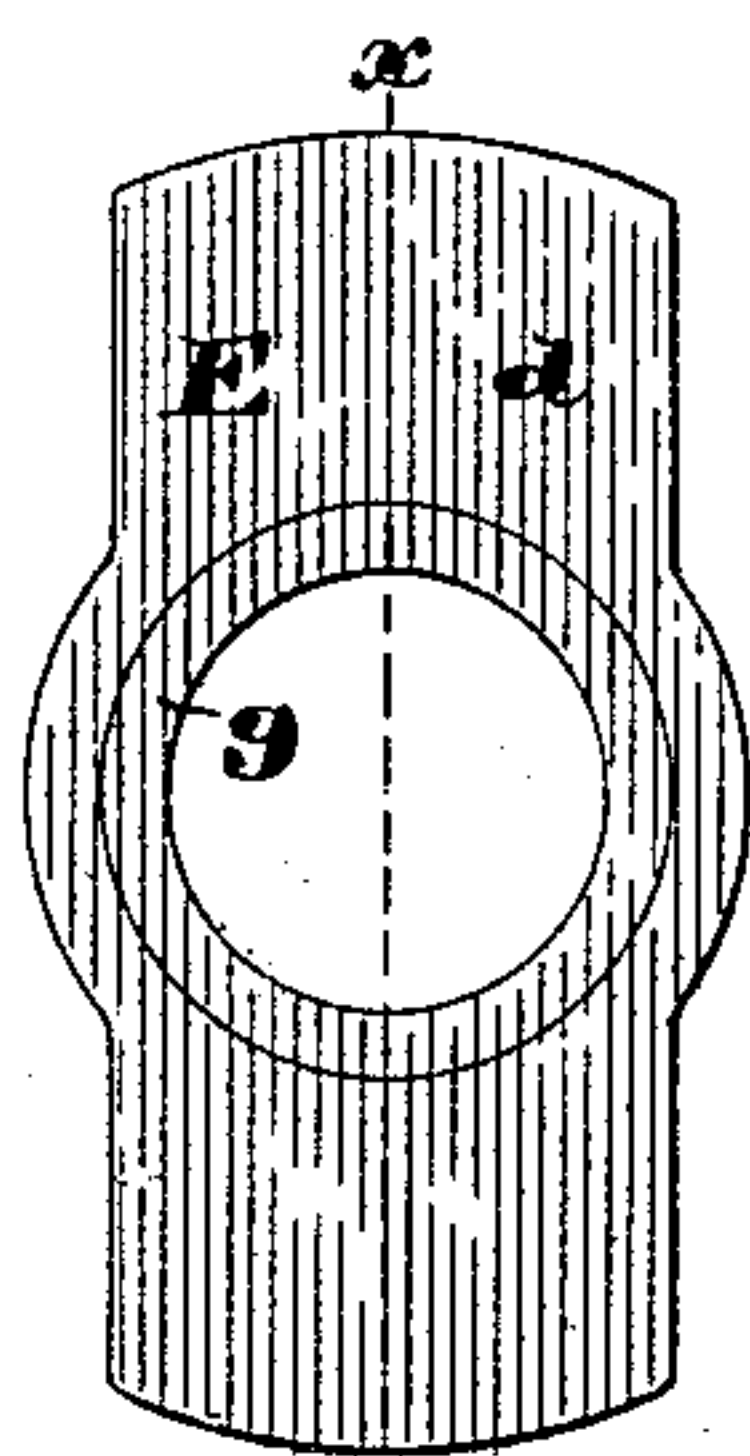


Fig. 4.

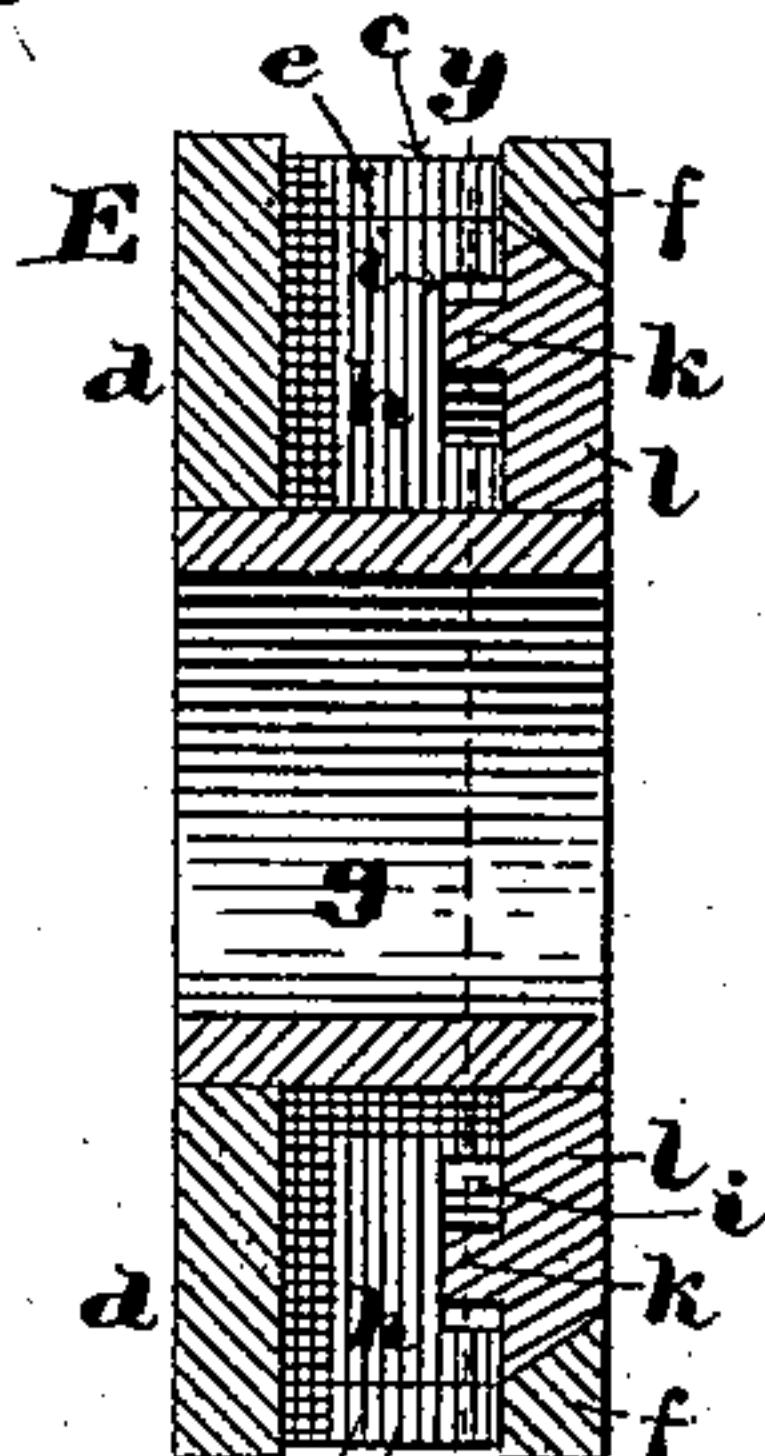


Fig. 5.

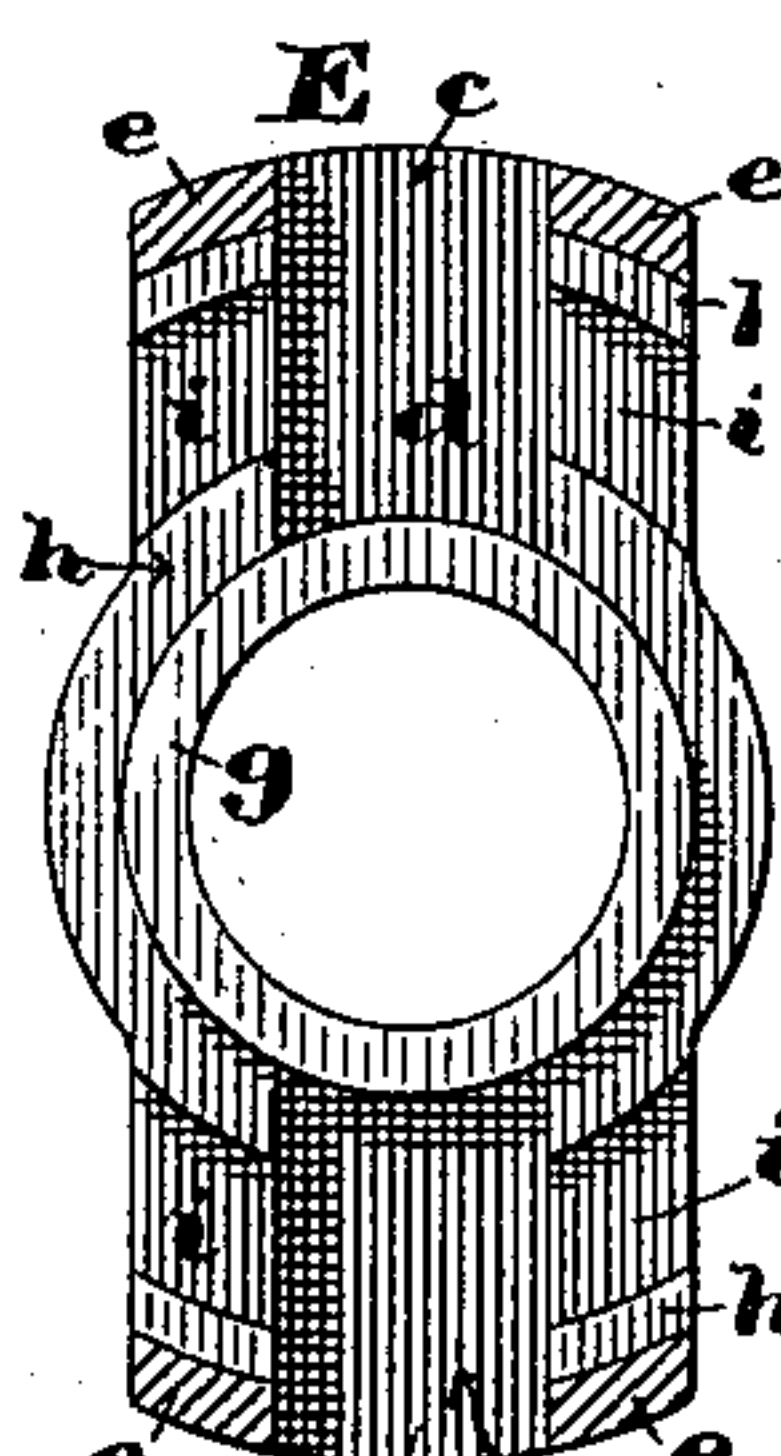


Fig. 6.

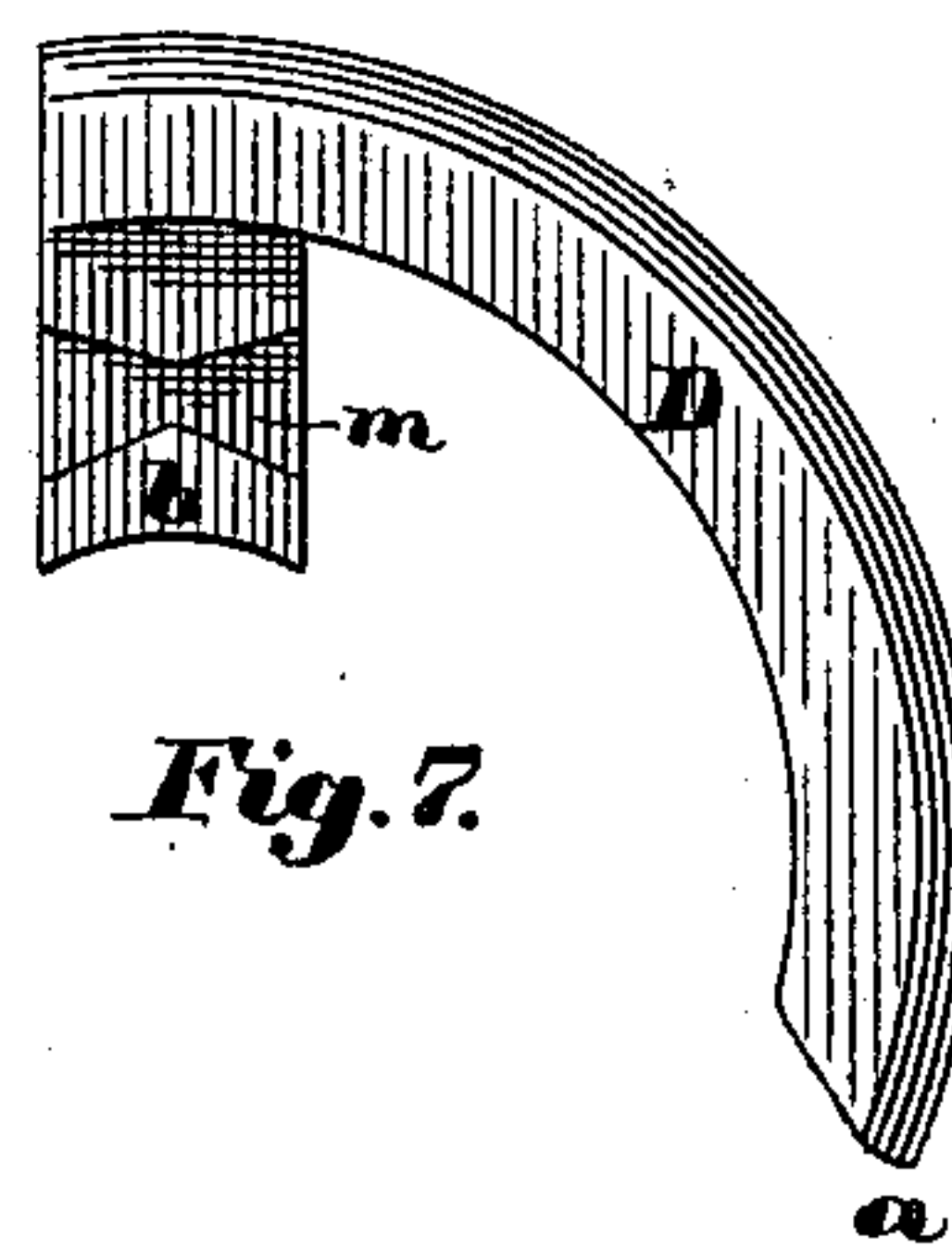


Fig. 7.

Witnesses:  
Frank E. Gray,  
Robert B. Edes,

Inventor:  
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by Walter E. Lombard,  
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# UNITED STATES PATENT OFFICE.

M. THADDEAUS HARRIGAN, OF WOLLASTON, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF CAMBRIDGE, MASSACHUSETTS.

## ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 386,538, dated July 24, 1888.

Application filed April 16, 1888. Serial No. 270,768. (No model.)

*To all whom it may concern:*

Be it known that I, M. THADDEAUS HARRIGAN, of Wollaston, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Rotary Cutters, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to rotary cutters, and particularly to that class of rotary cutters which are used for trimming boot and shoe heels; and it has for its object the providing of a fastening for the cutter-blades, which, while it firmly secures said blades in position, will allow of a ready adjustment thereof outwardly as the cutting-edges are worn away, and which will permit them to be readily removed and replaced when desired.

It consists in certain novel features of construction, arrangement, and combination of parts, which will readily be understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings, Figure 1 represents an elevation of one of my improved cutters complete with heel-guard and counter-guard applied thereto. Fig. 2 represents an elevation of the cutter removed from its shaft and showing the various parts in position to allow of the removal of the blades. Fig. 3 represents a similar view showing the various parts in position with the blades locked. Fig. 4 represents a rear elevation of the hub to which the blades are locked. Fig. 5 represents a sectional elevation of the same, the cutting-plane being on line *x x* on Fig. 4. Fig. 6 represents a sectional elevation of the same, showing the inner hub and its projecting arms in elevation, the cutting-plane being on line *y y* on Fig. 5; and Fig. 7 represents an elevation of one of the cutting-blades.

In the drawings, A is the shaft of a heel-trimming machine, upon which, between the heel-guard B and the counter-guard C, is mounted my improved rotary cutter in such a manner that said cutter and heel-guard will be clamped together and rotate with said shaft, while the counter-guard is loosely mounted thereon.

The curved cutting-blades D D are provided

at one end with suitable cutting-edges, *a a*, while from their other ends project inwardly the shanks *b b*, which correspond to the shape of and fit into the openings *c c* in the outer ends of the block E, which consists of a plate, *d*, from either end of which project the bars *e e*, which are connected together by the cross-bar *f* to form the said openings *c c*, all as will be readily seen by referring to Figs. 4, 5, and 6. The plate *d* is provided with a central opening to receive and form a bearing for one end of the hub *g*, which is provided with two projecting arms, *h h*, upon either side thereof, which are of such a distance apart as to make a continuation of the walls of the openings *c c*, as will be seen by referring to Figs. 5 and 6. The arms *h h* are each provided with a groove, *i*, of sufficient depth to admit the ribs *k k*, mounted upon the back side of the plate *l*, mounted upon and revoluble about the hub *g*, and having its outer ends beveled to engage with the beveled inner ends of the cross-bars *f f*, in order to clamp said plate *l* in position.

The shanks *b b* of the blades D D are provided with transverse grooves *m m*, which are narrower in their middles than at their ends, and when said shanks are in position within said openings *c c*, and between the arms *h h* of the hub *g*, the ribs *k k* of the plate *l* will be capable of entering said grooves *m m*, as shown in Fig. 3 in dotted lines, in order to lock said blades firmly in position, the narrowest part of said groove *m* being just the width of said ribs *k k*. The ribs *k k* are made eccentric to the axis of the hub *g*, about which the plate *l* is adapted to be turned, as shown in dotted lines in Figs. 2 and 3, so that if the plate *l* be turned a little farther in the direction indicated by the arrow in Fig. 3 it is obvious that the blade D D will be moved outwardly on a radial line, which it is often desired to do as the cutting-edges *a a* are worn away.

When the blades D D get useless and need sharpening, or are broken and need replacing by new ones, by turning the plate *l* into the position shown in Fig. 2 they may be readily removed.

The block E may be provided with three, or even more, flanges *e f* without altering the principles of my invention, in which case it is



obvious that there will be an additional cutter-blade, D, an additional pair of arms, *h h*, and an additional rib, *k*, for each additional flange *e e f*. By this construction of a hub for rotary cutters the blades may be readily adjusted outwardly or inwardly or removed entirely, and replaced by new blades, which is a great advantage over the devices now in use both in a saving of time and money and in its capability of doing better work.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a rotary cutter, the combination of a central hub provided with a series of radial openings, a series of cutter-blades each provided with a transversely-grooved shank which is adapted to fit and project into the openings in said hub, and a plate revoluble about the axis of said cutter and provided with ribs which project into the grooves in said shanks to lock and secure said cutter-blades in position.

2. In a rotary cutter, the combination of a central hub provided with a series of radial openings, a series of cutter-blades each provided with a transversely-grooved shank which is adapted to fit and project into the openings in said hub, and a plate revoluble about the axis of said cutter and provided with ribs ec-

centric to said axis which project into said grooves in the shanks of the cutter-blades to hold them in position and at the same time move them toward or from the axis when desired.

3. In a rotary cutter, the combination of a block having flanged ends in which are radial openings, a hub mounted in a bearing in said block, and having as many radial pairs of arms as there are openings in the flanges of said block, with the walls of which openings the inner sides of said arms form a continuation, a series of cutter-blades each having a transversely-grooved shank adapted to fit and project through said openings and between said arms, and a plate revoluble about the axis of said hub and provided with ribs which project into said grooves in said shanks to hold said blades in position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 10th day of April, A. D. 1888.

M. THADDEAUS HARRIGAN.

Witnesses:

WALTER E. LOMBARD,  
FRANK E. BRAY.