

(No Model.)

2 Sheets—Sheet 1.

J. MUNDELL & W. J. GORDON.

TOOL FOR TRIMMING THE SOLES OF BOOTS AND SHOES.

No. 257,368.

Patented May 2, 1882.

Fig. 1.

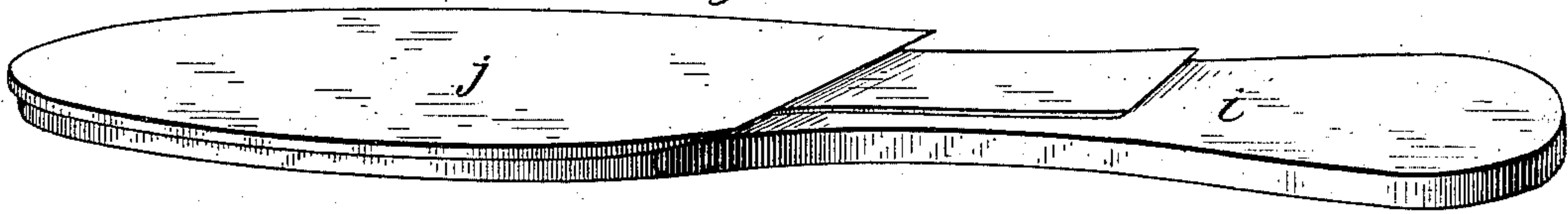


Fig. 2.

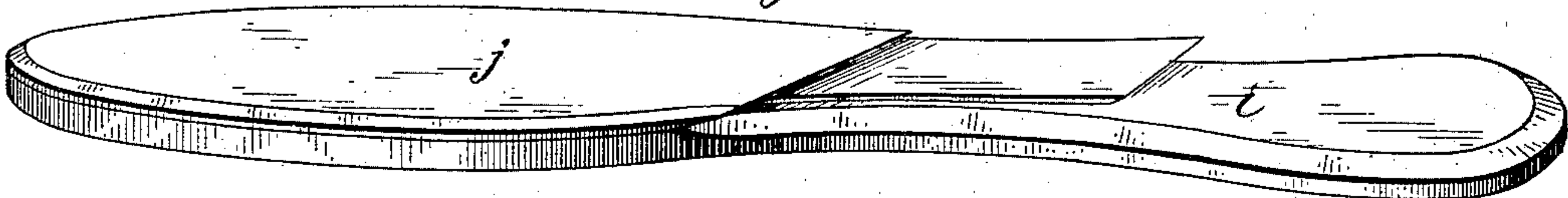
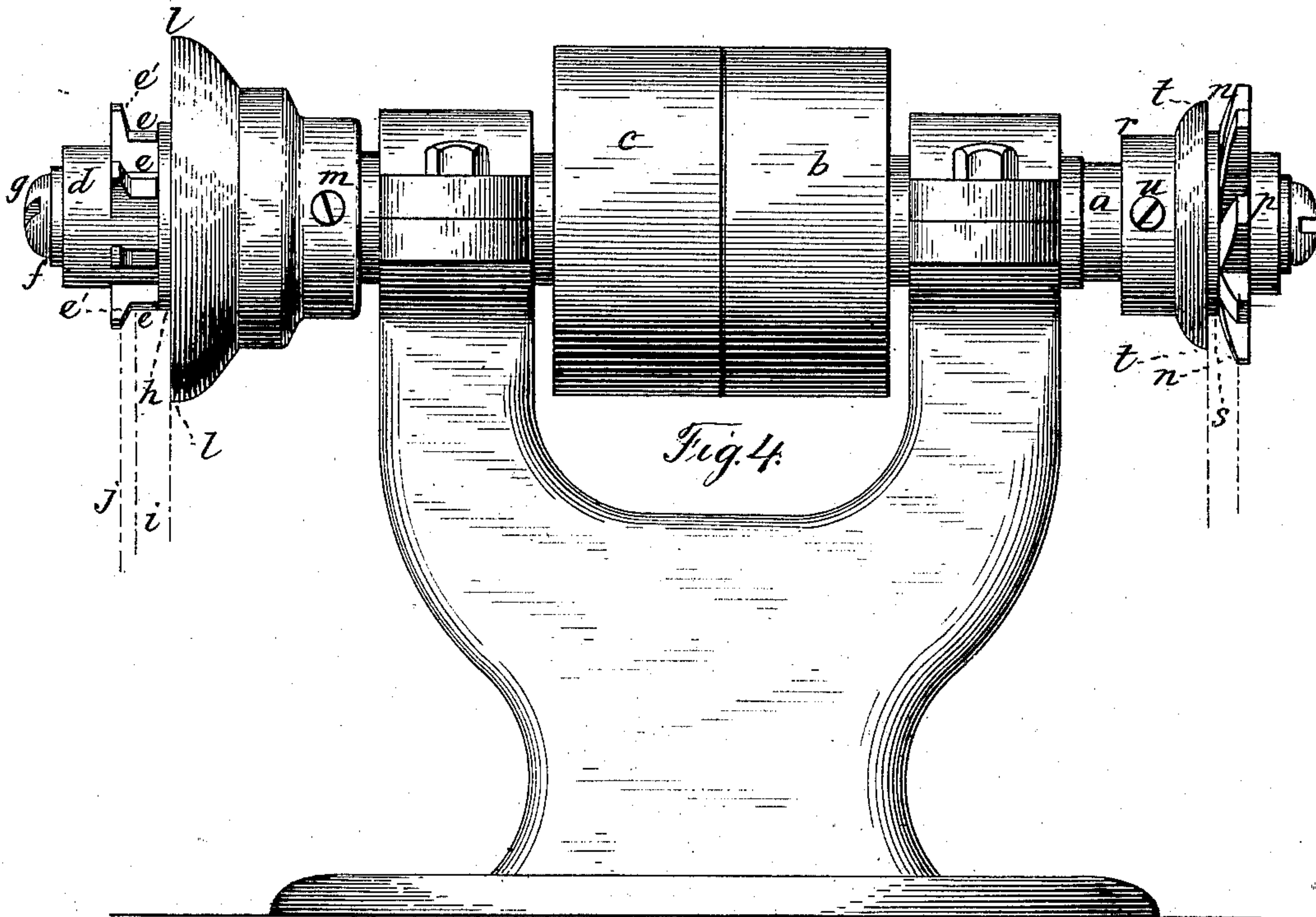
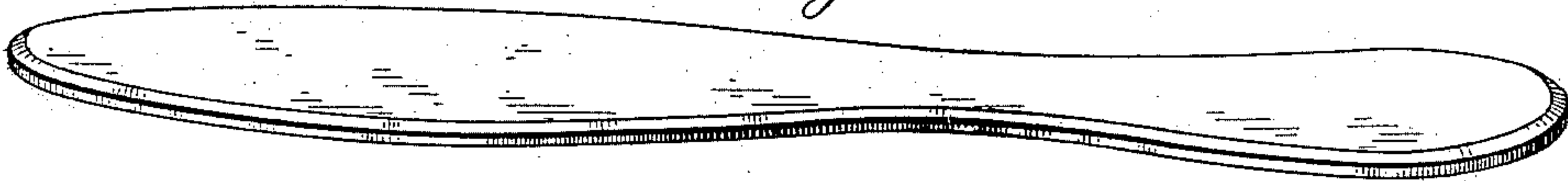


Fig. 3.



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(No Model.)

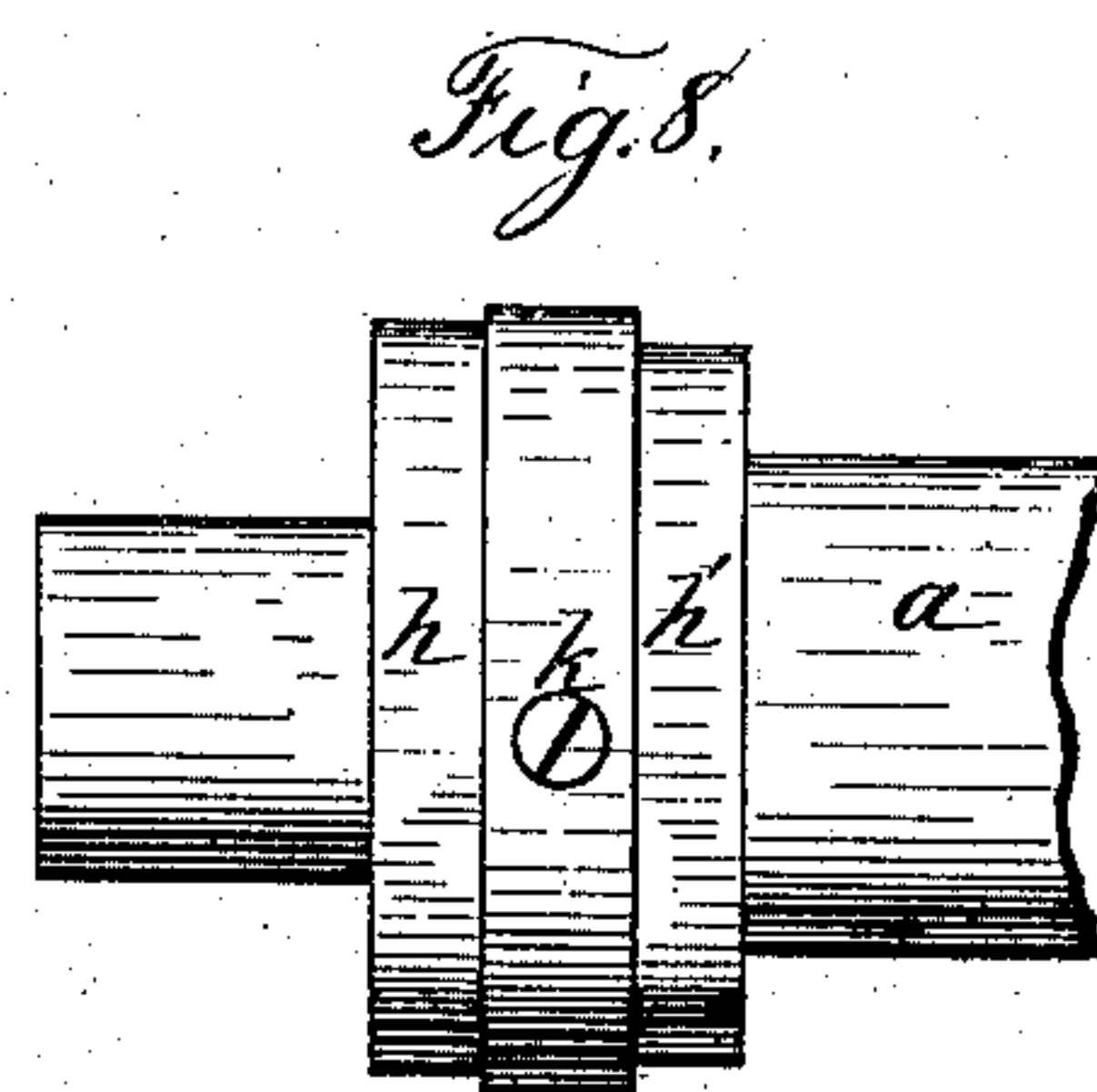
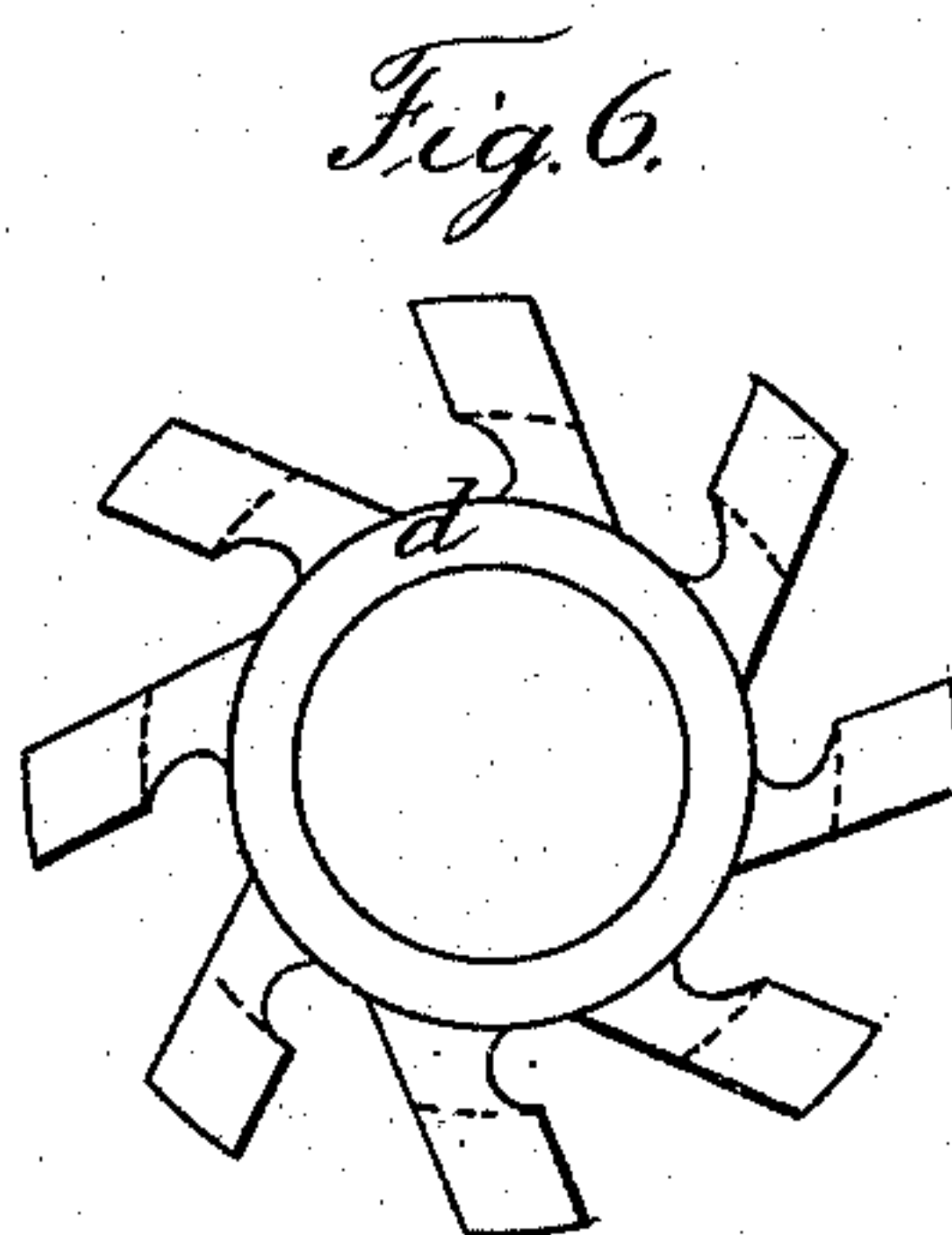
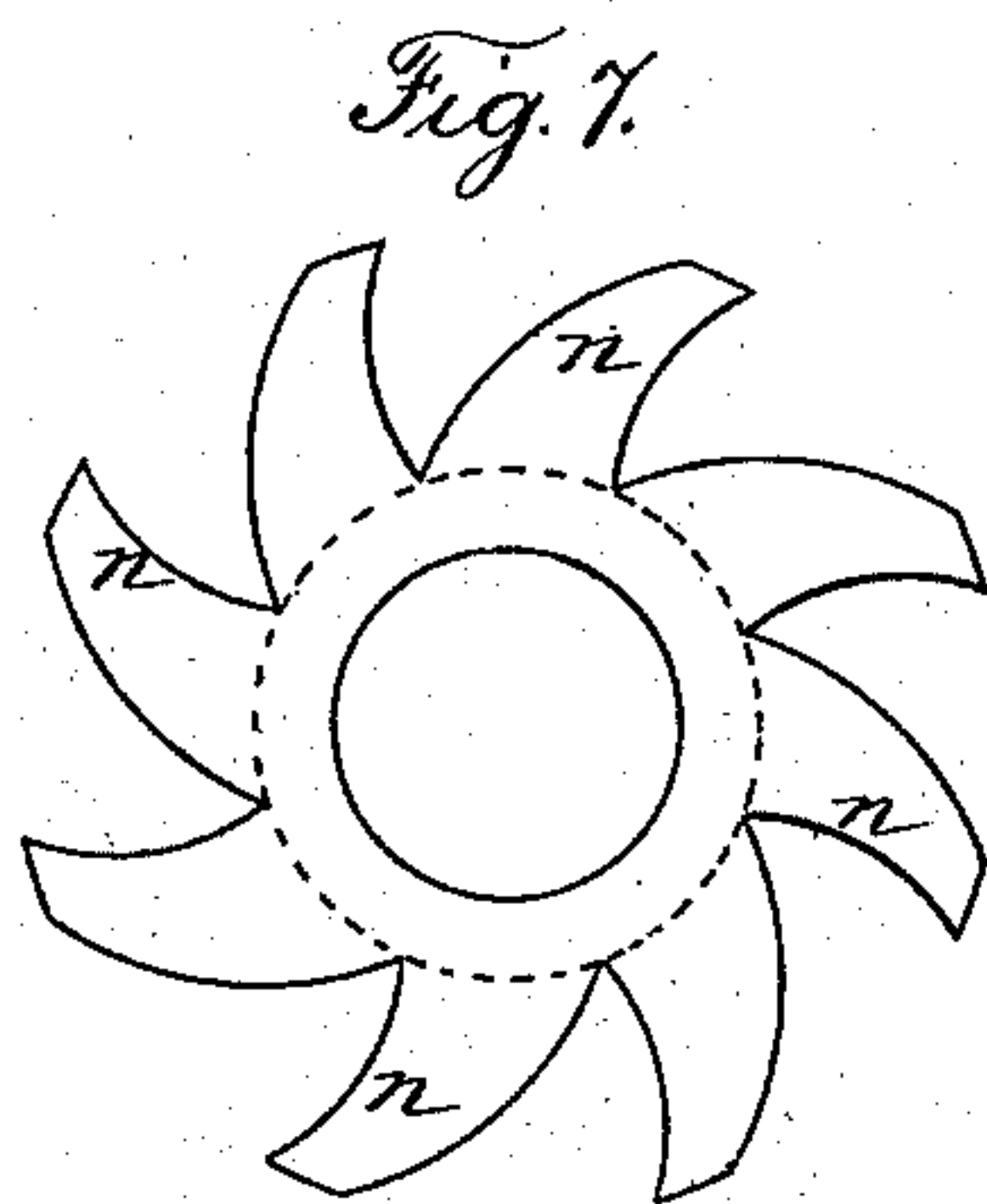
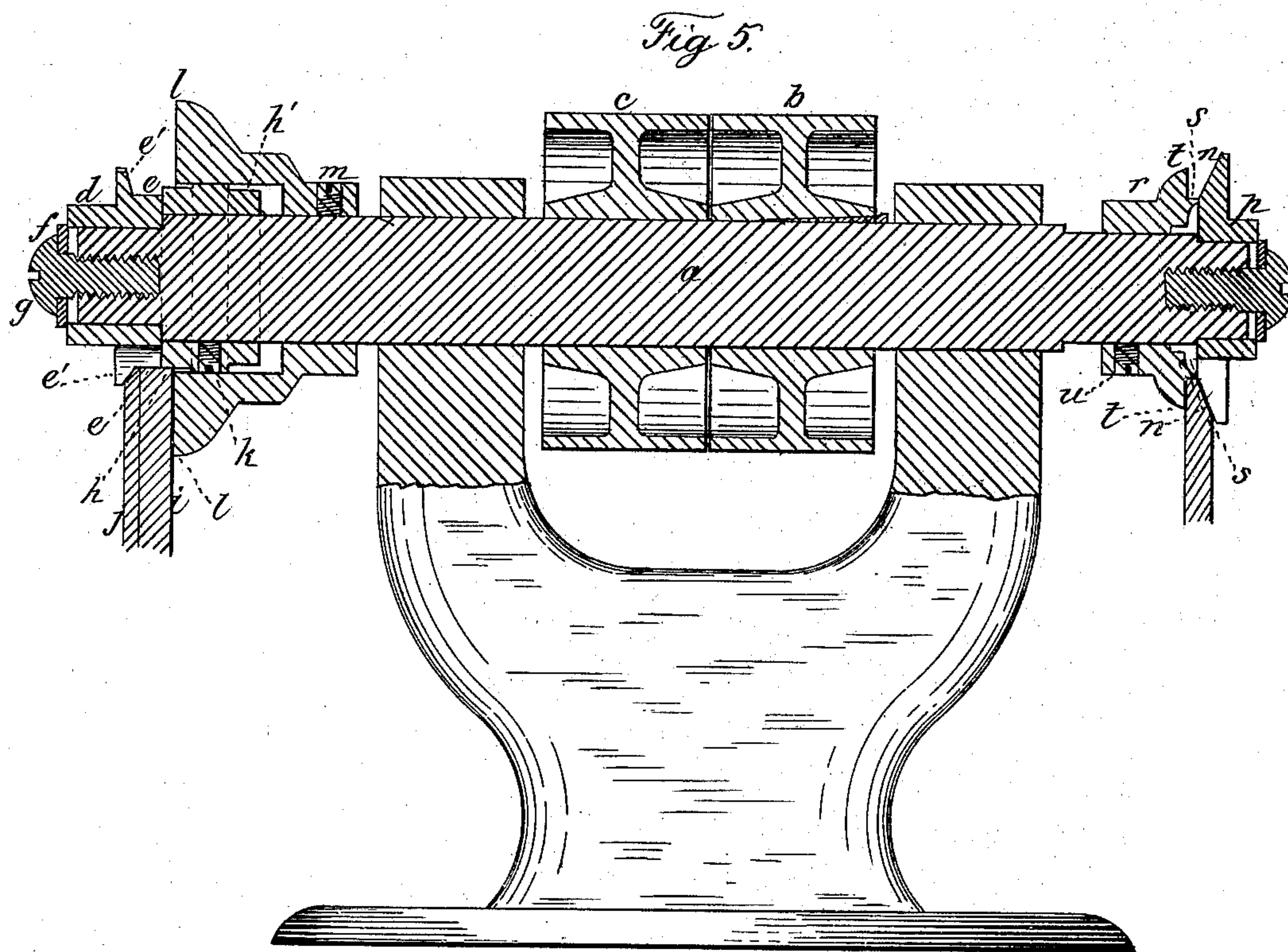
2 Sheets—Sheet 2.

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TOOL FOR TRIMMING THE SOLES OF BOOTS AND SHOES.

No. 257,368.

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UNITED STATES PATENT OFFICE.

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ASSIGNORS OF ONE-THIRD TO JOHN MUNDELL, OF SAME PLACE.

TOOL FOR TRIMMING THE SOLES OF BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 257,368, dated May 2, 1882.

Application filed March 20, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES MUNDELL and WILLIAM J. GORDON, both citizens of the United States, residing at the city and county of Philadelphia, in the State of Pennsylvania, have jointly invented new and useful Improvements in Revolving Tools for Trimming and Randing Tap-Soles and Beveling Shoe-Soles, of which the following is a specification.

In the manufacture of boot and shoe soles the tap or slip sole, in being secured upon the outside, leaves a projecting lip or edge, which must be trimmed off, the welt or rand taken from its upper edge, and the upper edge of the outsole beveled from shank to shank around the heel to give the required finish. In this work the tap-sole has been trimmed independent of the randing and the rand or welt taken off, and the beveling of the outsole made after the sole has been attached to the upper; but in such operation the upper is liable to be cut, abraded, and burned by the heat produced by the action of the cutter.

The object of our invention is to produce a revolving tool for trimming and randing the tap-sole and for beveling the outsole at the same operation before the sole is attached to the upper, whereby the work is done as quick as the sole can be handled, the sole thus finished at less expense, and all injury to the upper avoided. A circular collar-gage bearing and a circular face-gage serve to support and guide the sole under the action of the cutter, and such guiding-support is made adjustable to suit different thickness of soles, while the function of such combined gage is the same with a cutter adapted for trimming and randing the tap-sole, and with a cutter adapted for beveling the outsole, the presenting of the work from one cutter to the other being practically a continuous operation.

Referring to the accompanying drawings, Figure 1 represents the sole before being trimmed or the rand taken out; Fig. 2, the sole trimmed, the rand taken out and beveled; Fig. 3, an insole having its edges beveled. Fig. 4 represents a side elevation of a revolving cutting-tool embracing our invention; Fig. 5, a vertical longitudinal section of the same. Fig. 6 shows the trimming and randing cut-

ter, Fig. 7 the beveling-cutter, and Fig. 8 the reversible ring-bearing gage.

The cutting-tool may be mounted in a frame, as shown, secured to a bench, or otherwise supported for convenient use. It consists of a short arbor, *a*, having a cutter at each end, and provided with a fixed and loose pulley, *b* and *c*, by which it is operated.

Referring to the operation of trimming and randing the tap-sole, the cutter therefor consists of a cylindrical hub, *d*, having a series of cutters formed around its circumference at one end in tangential position. These cutters have each two cutting-edges—a horizontal part, *e*, for trimming the edge of the tap-sole, and an outwardly-inclined part, *e'*, for taking off the welt or rand. The end of the arbor is formed with a shoulder, against which the hub is clamped by a washer, *f*, and a screw, *g*, which enters the end of the arbor. A ring or collar gage is fitted upon the arbor against the collar-hub, having its circumference at such joining on a level with the edge-trimming parts *e* of the cutters, and forms a circular gage-bearing, *h*, for the edge of the outsole *i*, to limit the trimming of the tap-sole *j* even with the edge of the outsole and prevent the cutting of the latter, as shown in Fig. 5. This ring-gage has a similar circular gage-bearing, *h'*, at its opposite end, but of a less diameter than the gage-bearing *h*, so that as the cutter parts *e* are reduced from wear and from being sharpened the ring-gage is reversed end for end to bring its gage-bearing of smallest diameter against the cutter-hub to match the cutter-trimming parts. A screw, *k*, entering the middle part of the ring-gage, serves to secure it in position. To reverse its position the cutter is removed. A face-gage, *l*, is fitted upon the arbor, and is made with a central recess, so that it can be moved and set over the ring-gage to determine the distance of the rand from the edge of the sole, or to set the cutter to suit different thicknesses of soles. The face of this gage stands vertical and at right angles to the ring-gage bearing, and the sole is presented to the cutter with its outer side against the face-gage and its edge upon the ring-gage, and is moved over them under the action of the cutter. A screw, *m*, passing

through the hub of the face-gage, serves to clamp it to the arbor when set to suit the thickness of the work, and to give the required bevel—called the “rand”—around the edge 5 of the tap-sole. The parts, when set, have a fixed relation to each other, and are only adjusted to adapt the tool for soles of different thicknesses. The trimming and randing of the tap-sole being finished, the sole is presented 10 to the beveling-cutter to give the bevel from shank to shank around the heel on the inner side of the outsole. Referring now to this cutter, the cutters *n* proper are formed upon a hub, *p*, secured upon the end of the arbor 15 against a shoulder, in the same manner as the trimming and randing cutter. The cutters *n* have their inner faces beveled toward the end of the arbor. A ring or collar gage, *r*, adjustably fitted upon the arbor, has a circular bearing, *s*, projecting next the cutter for the edge 20 of the sole, and a vertical face-bearing, *t*, against which the inner side of the sole is moved in passing it from shank to shank around the heel under the action of the cutter. A screw, *u*, passing through the ring part, serves 25 to secure this gage when set the proper distance from the beveled sides of the cutter to give the required bevel to the sole and to bring the edge to the required thickness. This 30 ring or collar gage is adjustable upon its arbor nearer to or farther from the cutter to suit such differing thickness of soles.

In trimming and randing the tap-sole its edge is presented to the under part of the revolving cutter, commencing at the shank, and 35 turning it around the toe to the other shank completes the operation. This is quickly done, the sole being supported and guided upon the ring-gage and against the face-gage, so as to 40 trim the tap-sole flush with the edge of the outsole and give the required bevel to the tap-sole, called the “rand.”

As the edge-trimming parts of the cutters are on the same plane with the gage-bearing 45 for the edge of the outsole, the latter is protected from the action of the cutters, while the adjustment of the vertical face-gage over the ring-gage is made to suit the thickness of the sole and to give the proper rand. The operator 50 holding the sole in the position in which it leaves the trimming and randing cutter, presents it to the beveling-cutter, turning it from shank to shank around the heel, the sole being guided and supported upon the ring-gage and 55 against the face-gage, which is adjusted upon the arbor to give the proper bevel to suit the thickness of the sole. Soles thus trimmed,

randed, and beveled will have a uniform edge thickness.

In soles provided with spring-heels the operation of trimming and randing the heel piece 60 or wedge is effected in the same manner as in the tap-sole. Insoles can be beveled by the beveling-cutter, which must be adjusted to the thickness of such sole to give the proper bevel. 65 Single outsoles can be beveled in the same manner.

The cutters can be removed and replaced by new ones, when required, by removing their clamping-screws. 70

We claim—

1. The combination, with the arbor and a rotary cutter, of a ring-gage bearing and a vertical face-gage secured upon the arbor in the described relation to each other and said 75 revolving cutter, for the purpose specified.

2. The combination, with the arbor and a rotary edge-trimming and rand-finishing cutter fixed thereon, of a ring-gage bearing having a fixed relation to said cutter, and a 80 vertical face-gage having an adjustable relation to said cutter over said ring-gage, substantially as described, for the purpose specified.

3. The combination, with a rotary edge-trimming and rand-finishing cutter, of an adjustable vertical face-gage and a reversible ring-gage bearing secured in the described relation 85 to the cutter and to the adjustable gage, for the purpose specified. 90

4. The combination, with the arbor and the beveling-cutter, of the adjustable ring *r*, having a vertical face bearing-gage, *t*, and a circular gage-bearing, *s*, projecting at right angles from said vertical face-gage, substantially 95 as described, for the purpose specified.

5. The rotary tool herein described for trimming and randing the tap-sole and beveling the outsole, consisting of the arbor having a fast and loose pulley, a trimming and randing 100 cutter on one end, and a beveling-cutter on the other, each cutter having a circular gage-bearing and an adjustable vertical face-gage, substantially as described, for the purpose specified. 105

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JAMES MUNDELL.
WILLIAM J. GORDON.

Witnesses:

A. E. H. JOHNSON,
J. W. HAMILTON JOHNSON.