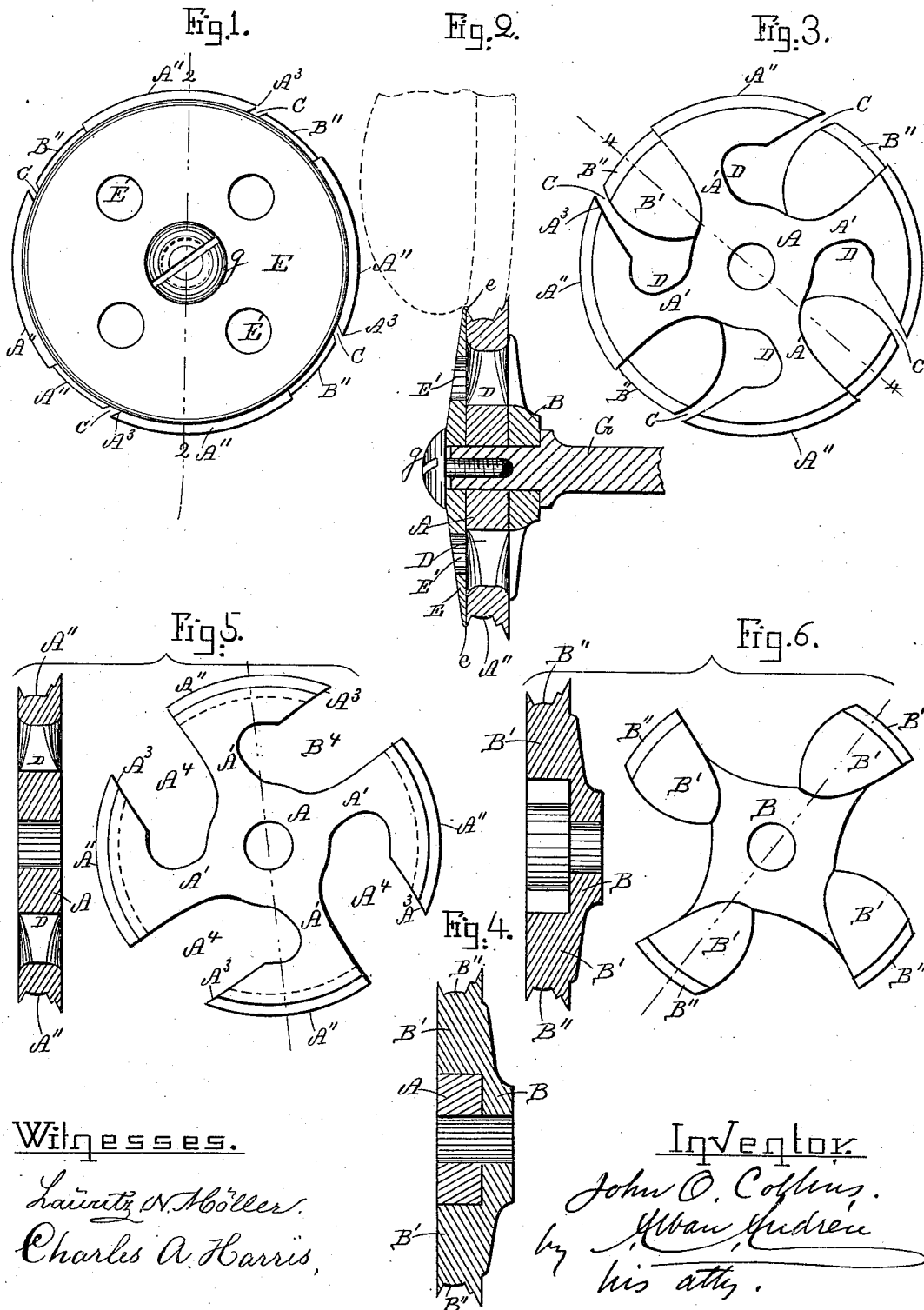


(No Model.)

J. O. COLLINS.
ROTARY CUTTER.

No. 577,420.

Patented Feb. 23, 1897.



Witnesses.

Laird N. Hölles.
Charles A. Harris,

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by *his atty.*

UNITED STATES PATENT OFFICE.

JOHN O. COLLINS, OF MARBLEHEAD, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD TO GEORGE E. BUTTERFIELD, OF SAME PLACE.

ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 577,420, dated February 23, 1897.

Application filed April 12, 1895. Renewed July 21, 1896. Serial No. 600,073. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. COLLINS, a citizen of the United States, and a resident of Marblehead, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Rotary Cutters, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in rotary cutters particularly designed for cutting the edges of boot and shoe soles, although it may to equal advantage be used for cutting other articles or materials as may be desired.

The invention is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a side elevation of my improved cutter, showing the guard-plate attached to it. Fig. 2 represents a vertical section on the line 2 2, shown in Fig. 1. Fig. 3 represents a side elevation of the improved cutter, showing the guard-plate removed. Fig. 4 represents a cross-section on the line 4 4, shown in Fig. 3. Fig. 5 represents in side elevation and section the male portion of the cutter, and Fig. 6 represents in side elevation and section the female or gage or bed portion of the cutter.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

My improved cutter consists of two parts—namely, the part A, which is the male portion or cutter proper, and the part B, which is the female portion or gage or bed.

The part A has a series of radial arms A', terminating as concentric segmental surfaces A'', the front portions A³ of which form the inclined cutting edges, as shown in Figs. 1, 3, and 5.

A⁴ are spaces or openings intermediate between the arms A' A', as shown.

The female portion B is provided with a series of side projections B', terminating as concentric segmental gage or bed surfaces B'', of a depth equal to the width of the cutter A, as shown in Figs. 3, 4, and 6.

The projections B' on the bed or gage portion B are received in the spaces A⁴ of the

part A when the two parts of the cutter are interlocked, as shown in Figs. 3 and 4, and when so interlocked the front edges of the projections B' serve as supports for the rear of the radial arms A', as shown in Fig. 3.

The diameter over the bed or gage surfaces B'' is made somewhat less than the diameter over the cutter-surfaces A'', as shown in Fig. 3, by which arrangement the surfaces B'' are made to serve the purpose of beds or gages for the cutting edges A³ in a manner similar to the bottom of a hand-plane relative to the cutting edge of its plane-iron.

The surfaces B'' thus serve as beds or gages for the work to rest against and to limit the depth of the cut made by the cutting edges A³, as above stated.

The projections B' are only large enough to partially fill up the spaces A⁴ on the part A, and it will be seen by reference to Fig. 3 that when the parts A and B are interlocked there is a clearance-space C between each cutting edge A³ and the rear of the side projections B'; and there is likewise a delivery-space D at the inner end of each recess A⁴, which communicates with the clearance-space C to permit the chips to pass laterally out during the operation of the cutter.

The contour, in cross-section, of the surfaces A'' B'' may vary according to the nature of the work to be done, and I do not wish to be limited to any particular form, shape, or contour of such surfaces.

When the cutter is used for leather-work, I prefer to use in connection with it a circular guard-plate E, having an outer peripheral lip e, lapping over one side of the cutter, as is common in sole-edge-trimming devices. The said guard-plate E is provided with a series of transverse perforations E', coinciding or nearly so with the delivery-spaces D on the cutter A for the purpose of allowing the chips made by the cutter to pass freely through such guard-plate perforations, thus preventing the choking or clogging of the cutter during its operation.

G in Fig. 2 represents a rotary shaft on which the cutter is mounted, and preferably held in place thereon by means of a fasteningscrew g, as is common in devices of this kind.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

5 The herein-described rotary cutter, consisting of the male portion A, of substantially the same width throughout and having radial cutting-arms A' provided with cutting edges A³, one side of said arms being concaved, of the interlocking female portion B, of less diameter than the male portion and having enlarged radial projections with convexed sides
10 of unequal curvature or pitch, the curvature of one side being like the curvature or pitch

of the concaved edge of the cutting-arms, said radial projections being of greater width than 15 the hub of the female portion, and gage or bed surfaces B'' on the periphery of the said radial projections, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of 20 two subscribing witnesses, on this 23d day of March, A. D. 1895.

JOHN O. COLLINS.

Witnesses:

ALBAN ANDRÉN,
LAURITZ N. MÖLLER.