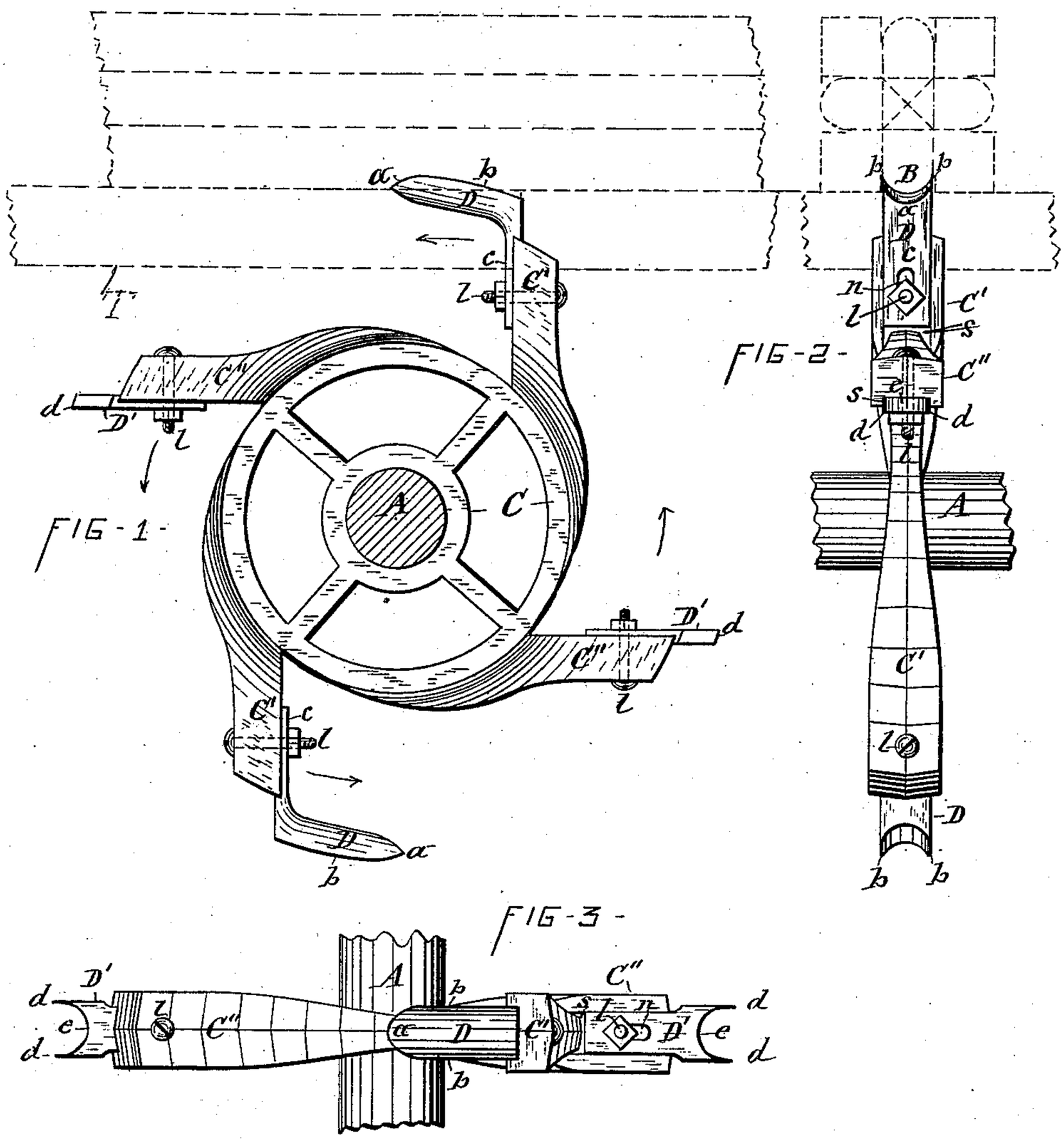
(No Model.)

C. E. ZIMMERMANN.

ROTARY CUTTER FOR WOOD WORK.

No. 360,794. Patented Apr. 5, 1887.



WITNESSES

C. Bendixon

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UNITED STATES PATENT OFFICE.

CHARLES E. ZIMMERMANN, OF SYRACUSE, NEW YORK.

ROTARY CUTTER FOR WOOD-WORK.

SPECIFICATION forming part of Letters Patent No. 360,794, dated April 5, 1887.

Application filed July 15, 1886. Serial No. 208,103. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. ZIMMERMANN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Rotary Cutters for Wood-Work, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The purpose of this invention is to form countersunken beads in wooden surfaces; and the invention consists in a novel construction of cutters mounted on a rotary cutter-head and adapted to form the aforesaid beads in a most rapid and perfect manner, as hereinafter fully explained, and specifically set forth in the claim.

In the annexed drawings, Figure 1 is a side view of my invention. Figs. 2 and 3 are edge views of the same, taken in planes at right angles to each other; and Fig. 4 is a plan view of a block of wood presenting a sample of work produced by my invention.

Similar letters of reference indicate corresponding parts.

C represents the cutter-head, fastened to a rotary arbor or shaft, A, arranged under the table T, which supports the wood to be operated on, and is provided with a slot, through which the cutters of the aforesaid cutter-head protrude to operate on the wood, as indicated by dotted lines in Fig. 1 of the drawings. Said cutter-head is formed with arms C′ C′ C″ C″, to which are secured my improved cutters D D and D′ D′.

The cutter D consists of an elongated blade formed concavo-convex or U shape in cross-section, and with a centrally forward-projecting rounded end, *a*, and has a continuous cutting-edge around said end and along its sides *b b*, and from the convex side at the opposite end projects the shank *c*, by which said cutter is secured to the arm C′ of the cutter-head, the cutter thus standing with its concavity outward and axially at right angles to the shaft A or axis of the cutter-head, which latter is rotated in the direction indicated by arrows in Fig. 1 of the drawings.

The cutter D′ consists of a blade formed with two parallel chisel-points, *d d*, projecting from the end thereof, and with a recess, *e*, between them, the distance between the chisel-points being equal to the width between the two longitudinal cutting-edges on the concave side of the cutter D.

The cutter D′ is secured to the arm C″ of the cutter-head in such a manner as to cause the cutter to stand with the planes of its chisel-points at right angles to the axis of the cutter-head and in range with or in the path of the longitudinal cutting-edges *b b* of the cutter D, and at the same distance from the axis of the cutter-head, so that when the latter is rotated the chisel-points *d d* of the cutters D′ D′ will cut two continuous parallel slits into the surface of the wood presented to them, and the cutting-edges *a b b* of the concave cutters D D will cut between and adjacent to the aforesaid slits, and thus form a smoothly-outlined countersunken bead, B, as represented by dotted lines in Fig. 2 of the drawings. By forming such beads at right angles to each other I obtain the checkered bead-work, as illustrated in Fig. 4 of the drawings.

In order to permit of adjusting the cutters D D′ so as to stand at the requisite distance from the axis of the cutter-head, I provide the attaching-shanks of the cutters with longitudinal slots *n* for the reception of the screw or bolt *l*, by which they are fastened to the arms C′ C″, and to properly sustain said cutters laterally I provide the arms C′ C″ with recessed seats *s*, into which the attaching-shanks of the cutters are snugly fitted.

I do not claim, broadly, the cutter formed concavo-convex in cross-section and sharpened around the end and side edges, as I am aware the same is not new; and I am also aware that cutters with chisel-points and an intermediate recess have been in use on various tools; but in no instance have the aforesaid cutters been arranged on a rotary cutter-head, so as to cause one to follow in the path of the other and cooperate to produce the work herein specified. Therefore

What I do claim specifically is—

The combination, with the rotary cutter-head, of cutters formed concavo-convex in cross-section and sharpened around their end and side edges, and secured to the cutter-head with the concavity outward and axially at right angles to the cutter-head, and intermediate auxiliary cutters, each formed with parallel chisel-

points, and with a recess between said chisel-points, and secured to the cutter-head with the planes of the chisel-points at right angles to the axis of the cutter-head and in the paths of the sharpened side edges of the concavo-convex cutter, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 12th day of July, 1886.

CHARLES E. ZIMMERMANN. [L. S.]

Witnesses:

FREDERICK H. GIBBS,

C. BENDIXON.