

(No Model.)

F. S. MADISON.  
ROTARY CUTTER.

No. 427,001.

Patented Apr. 29, 1890.

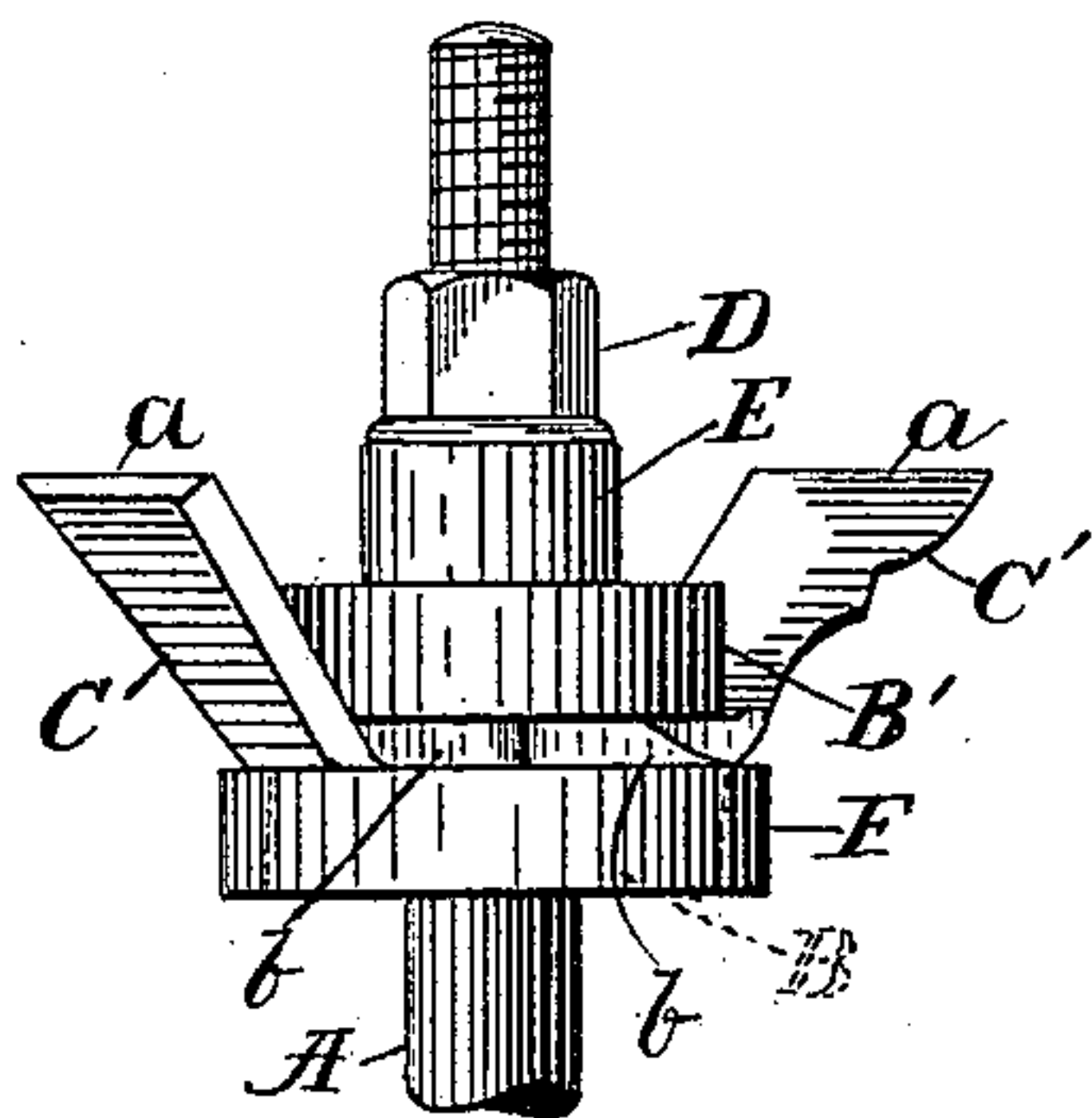


Fig. 1.

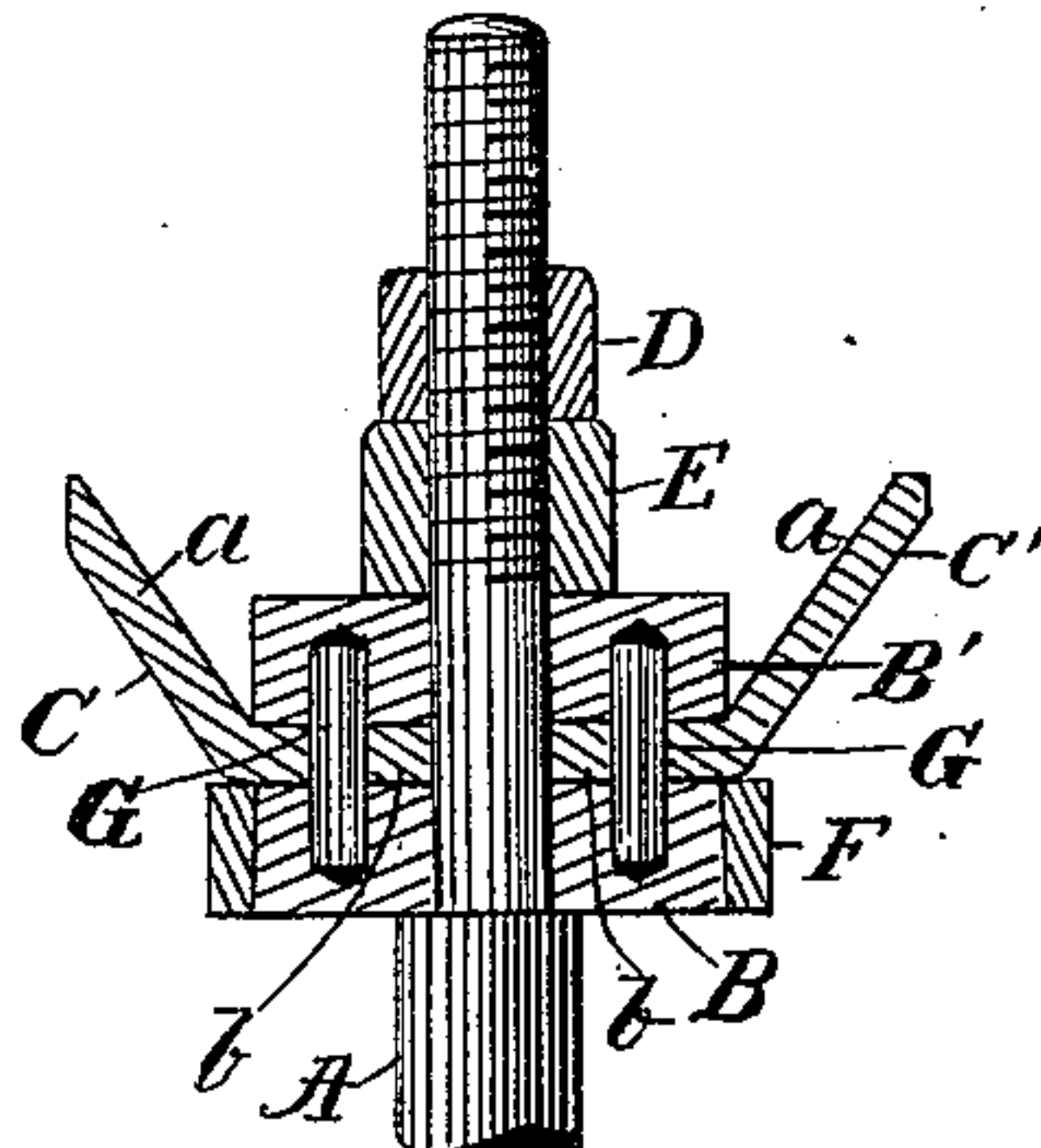


Fig. 3.

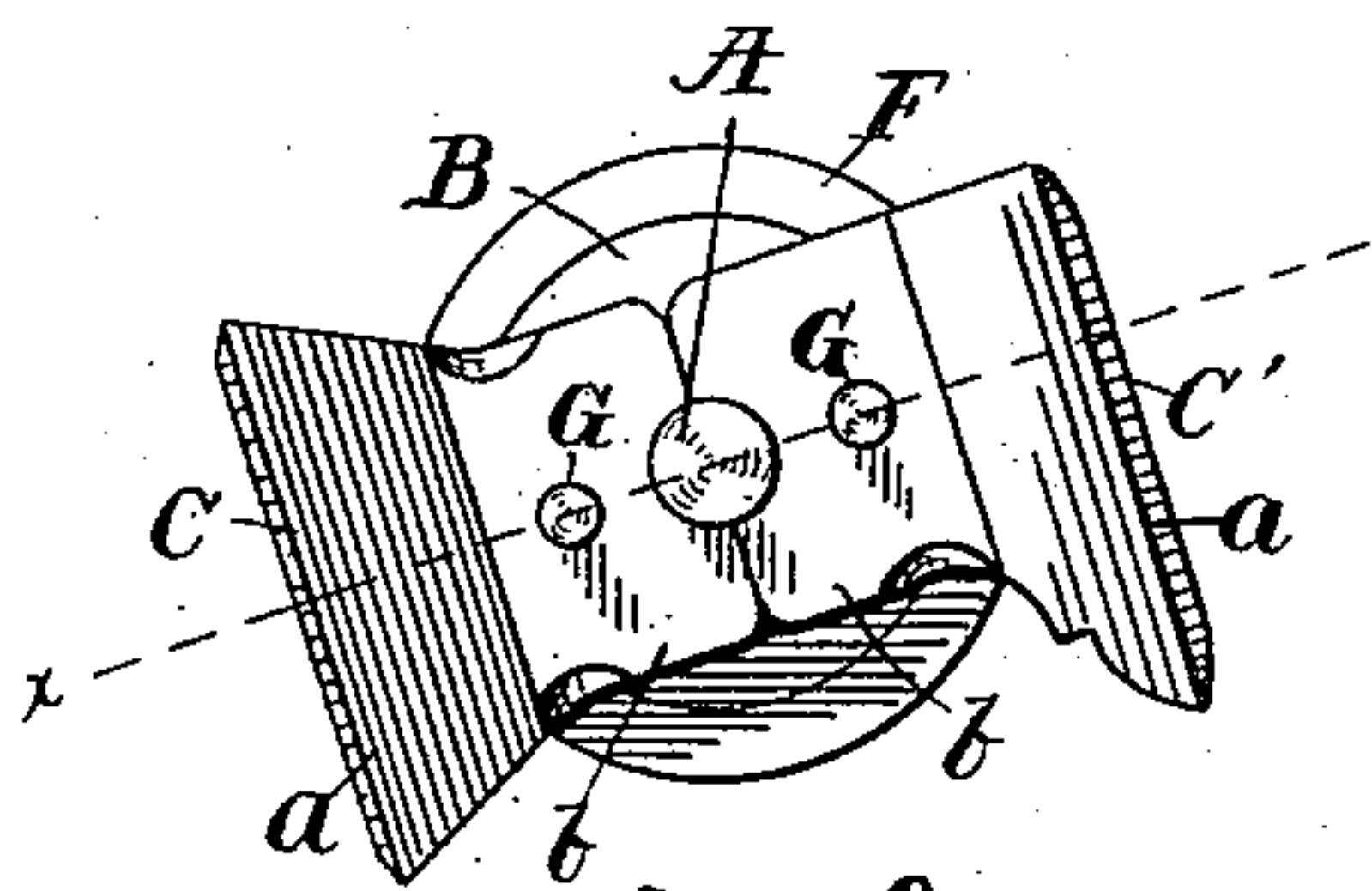


Fig. 2.

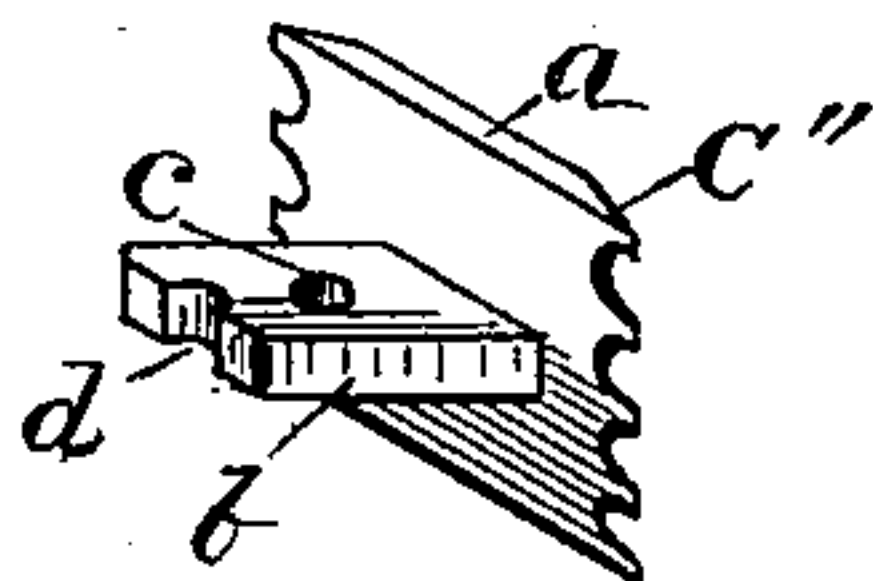


Fig. 4.

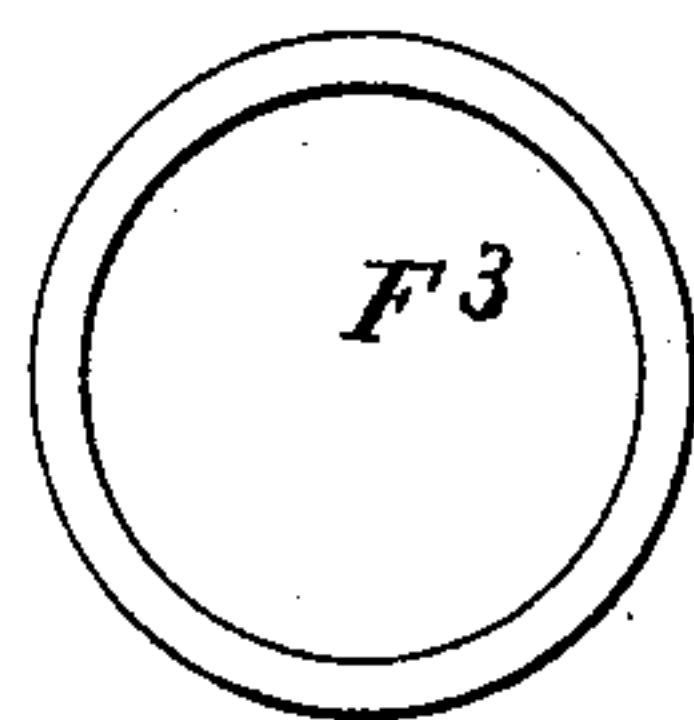
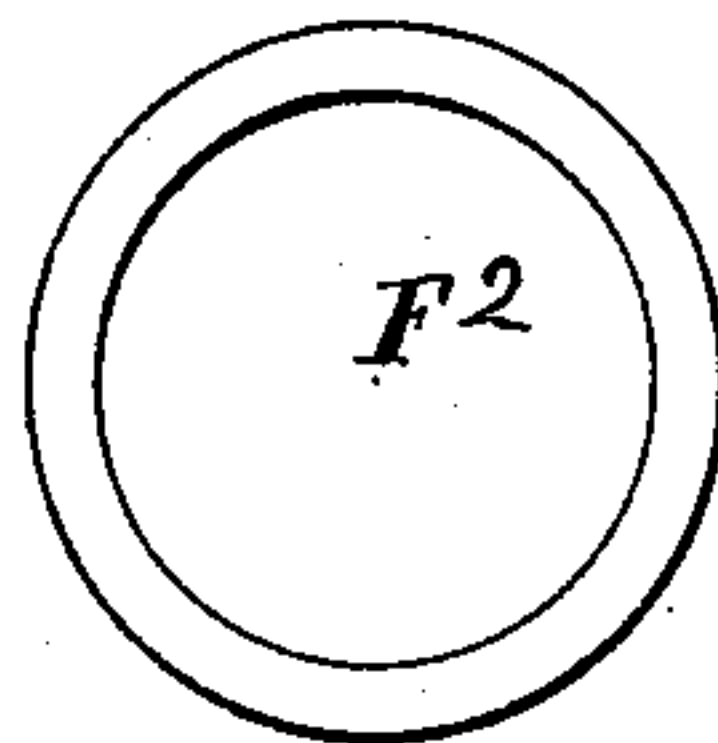
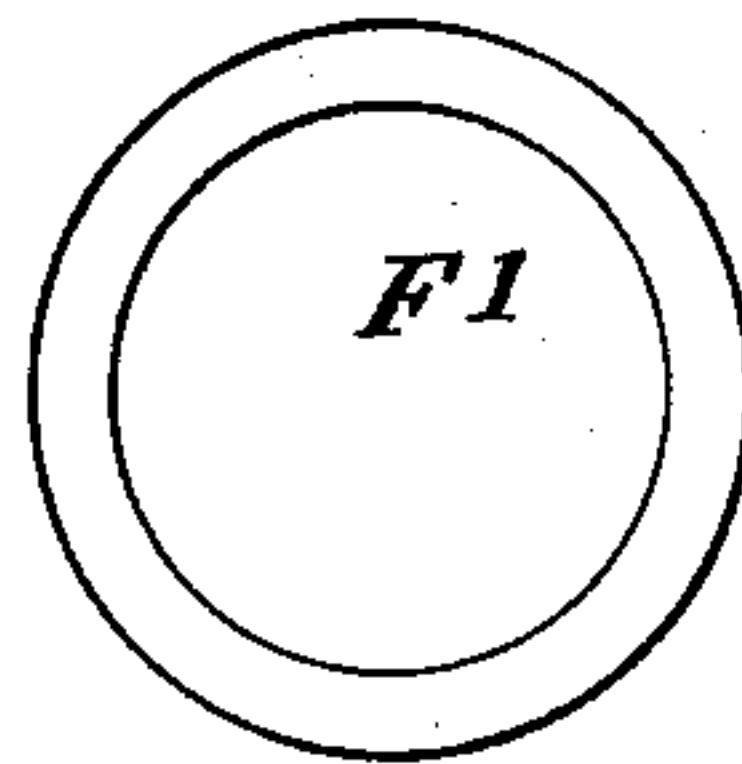


Fig. 5.

WITNESSES:

*Claude A. Buchanan*  
*John C. Pierce*

INVENTOR

*Frank S. Madison*

BY

*Moulton & Rogers*  
his ATTORNEYS

# UNITED STATES PATENT OFFICE.

FRANK S. MADISON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF  
TO JAMES B. WARE AND EZRA J. WARE, BOTH OF SAME PLACE.

## ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 427,001, dated April 29, 1890.

Application filed January 20, 1890. Serial No. 337,546. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. MADISON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Rotary Cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a rotary cutter for wood-working machinery; and the object of my invention is to provide a stock and bit of such form, construction, and arrangement as to be easily manufactured and quickly and securely adjusted; and it consists in the combination, arrangement, and construction of the various parts hereinafter described, and more particularly pointed out in the claim, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation of a device embodying my invention; Fig. 2, a plan view of the same with parts removed to show manner of placing the knives; Fig. 3, a vertical section on the line *x x* of Fig. 2; Fig. 4, a detail of knife; Fig. 5, a series of hoops of different outside diameters for increasing the diameter of the collar B.

Like letters of reference indicate like parts throughout the drawings.

A represents a threaded spindle, having a shoulder upon which rests a collar B, permanently secured to said spindle. A cutting-knife (of which various forms are shown, as C C' C'') having a shank *b* rests upon collar B. A second collar B' is placed upon the spindle and rests upon the shanks of the knives, and is held firmly in its position by nut D.

E is a washer, which may or may not be interposed between nut D and collar B'. Said collars are provided with sockets upon their adjacent faces, in which are placed pins G, which pass through holes *c* in the shanks *b* of the knives for holding said knives in place. The shanks *b* of the knives have semicircular notches *d*, to accommodate the spindle A, and they are adapted to be arranged in pairs, with the backs in contact, as shown in Fig. 2; but I do not confine myself to the forms of knives shown in the drawings. Any form of knife having a flat shank adapted to be secured between the collars B B' and a blade projecting beyond the rim of said collars may be used; and I provide the collar B with hoops F F' F<sup>2</sup> F<sup>3</sup>, of different external diameters, as guides for regulating the depth of cut, which guides act in conjunction with a pattern in a well-known manner.

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

The combination, with the spindle A, having shoulder, as shown, and the collar B, permanently secured to the said spindle, of the cutters having shanks resting on the collar, the collar B', the nut D on the spindle above the collar B, and the removable interchangeable hoops of varying sizes, adapted to fit the fixed collar B, and the pins G, passed through the shanks of the cutters and into holes in the collars B and B', substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK S. MADISON.

Witnesses:

DENNIS L. ROGERS,  
LUTHER V. MOULTON.