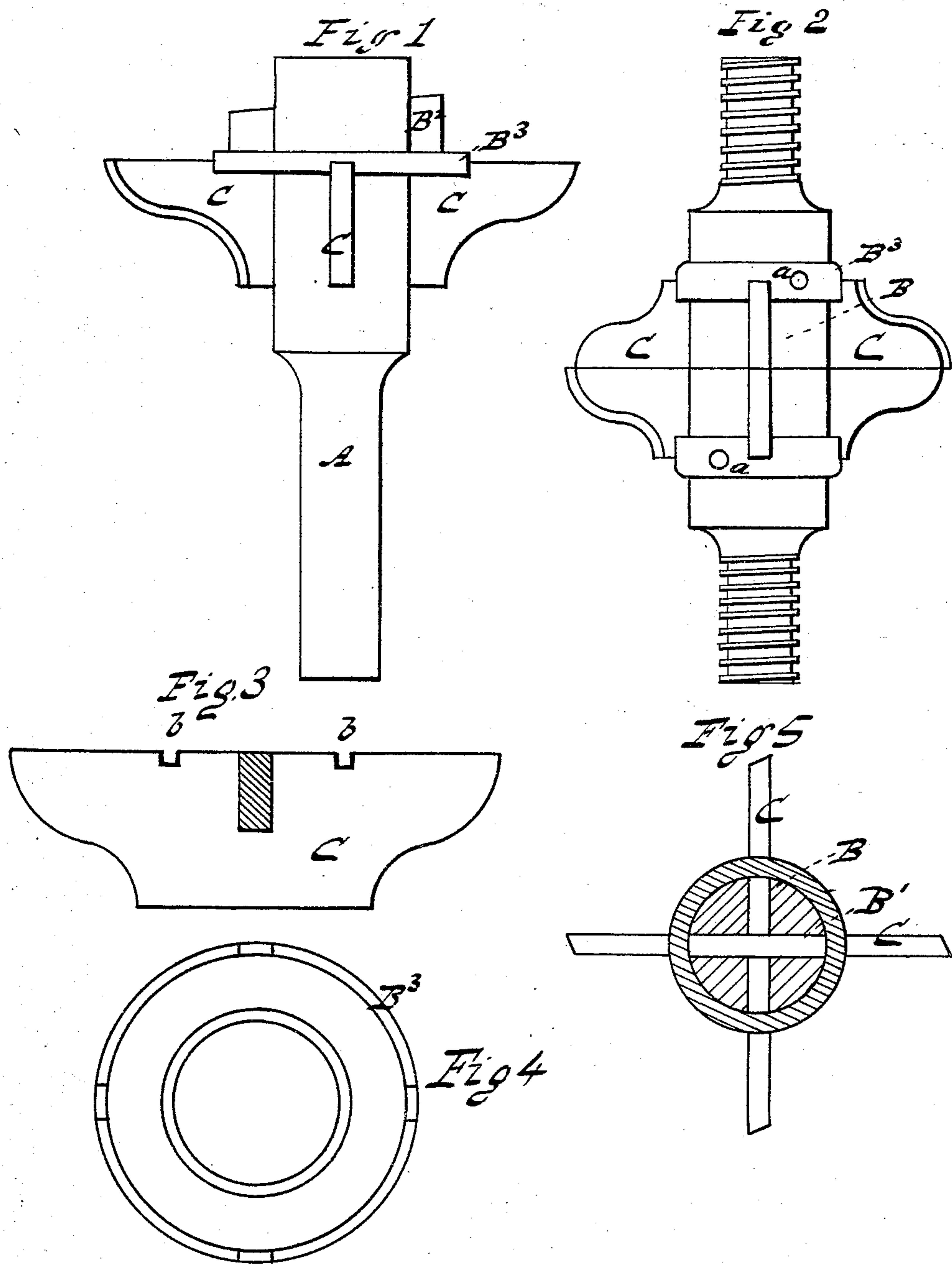


R. ARDREY.
Rotary-Cutters for Marble and Stone Molding
Machines.
 No. 147,033. Patented Feb. 3, 1874.



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UNITED STATES PATENT OFFICE.

ROBERT ARDREY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ROTARY CUTTERS FOR MARBLE AND STONE MOLDING MACHINES.

Specification forming part of Letters Patent No. **147,033**, dated February 3, 1874; application filed September 22, 1873.

To all whom it may concern:

Be it known that I, ROBERT ARDREY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Rotary Cutter for Marble and Stone Molding Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side view of cutter-head with single set of cutters. Fig. 2 is a side view of cutter-head with double set of cutters. Fig. 3 is a detail view in section, showing the intersection of cutter-plates. Fig. 4 is an under-side view of grooved ring for securing cutter in place. Fig. 5 is a horizontal sectional view of cutter-head.

This invention has relation to cutter-heads for marble and stone molding or cutting machines; and it consists in the novel construction and arrangement of the cutters and the devices for securing the same to the cutter-heads, the object being to provide for the removal of said cutter to be ground, and the ready replacement thereof.

Referring to the drawings, A designates the core of the cutter-head, having the slots B B¹ cut through from side to side, and intersecting each other. C designates the cutter, designed especially for forming the molding on marble or stone, and having their cutting-edges curved to suit any desirable pattern of molding. The cutters are made from plates of metal, admitting of some variation in form and arrangement, as indicated in the different figures of the drawing.

Fig. 1 represents the four cutters formed from two plates, each having its both ends ground, respectively, from opposite sides of the plate. These plates are inserted in the slots B B¹ at right angles to each other, being correspondingly notched, so as to intersect, as shown. A wedge, B², is then driven through the slot B¹, which is the longer of the two, above said plates, and a grooved collar, B³, placed on the cutter-head or core above them, and its inner flange fitted into the notches *b* in their longer edges, (having their inner walls

flush with the surface of said core,) while its outer flange is notched to receive the edges of the plates.

In Fig. 2 is shown a form of cutter-head capable of being reversed, so as to utilize two different sets of cutters. Each slot is of sufficient length to receive two plates—one above the other. The plates of each set may be notched so as to intersect, as shown in Fig. 1; or one plate of each set may be made without the intersecting notch, and two separate plates placed in the head at right angles to it, their inner ends resting against its sides. The two sets of cutters are secured to the head by means of two collars fitted closely together, and resting, as shown, in notches formed in the shorter edges of the plates. The collars are secured rigidly to the core by means of pins *a* passing diametrically through both.

In the drawing, the upper cutter-plates in Fig. 2 are illustrated as beveled in a direction contrary to that of the lower cutter-plates. By this means, on inverting the cutter-head on its spindle, the upper cutters will be brought into the position of, and cut in the same direction as, the lower cutters, and this change may be made when the latter becomes dulled.

Instead of making the cutters beveled in contrary directions, as shown in said Fig. 2, the bevels may be all in one direction, either right or left; then, on inverting the head, as before, the bevels or edges will be in position to cut in a contrary direction. This is often desirable in cutting irregular forms, or forms having corners or abrupt turns. In such cases the cutters would be started, and would cut up nearly to the corner of the slab or plate, the movement of the table being, say, to the right. The machine would then be stopped, the cutter-bed be drawn out, the cutter-head inverted, and the table moved in a contrary direction, say to the left, the cutter now cutting from the corner until it met the cut which had been started from the opposite end of the slab or plate; so, too, the cutters may at any time be made to cut in an opposite direction without being moved, by changing their bevel by filing, and reversing the movement of the machine, and the upper cutters, if the machine be made strong enough, may operate on one slab, while the lower ones operate on another.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A rotary cutting-tool for marble or stone molding or cutting machines, having a slotted core with removable cutters passing through said core and intersecting, substantially as specified.

2. The intersecting cutter-plates, correspondingly notched at their middle parts, and applied to a slotted core, substantially as set forth.

3. The collar having its under surface grooved and outer flange thereof notched, in combination with the notched cutter-plates, as shown and specified.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of September, 1873.

ROBERT ARDREY.

Witnesses:

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