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PATENTED JAN. 29, 1907.

W. H. HOLT.
RELEASING SCREW ARBOR FOR MILLING MACHINES AND THE LIKE.
APPLICATION FILED JAN. 30, 1906.

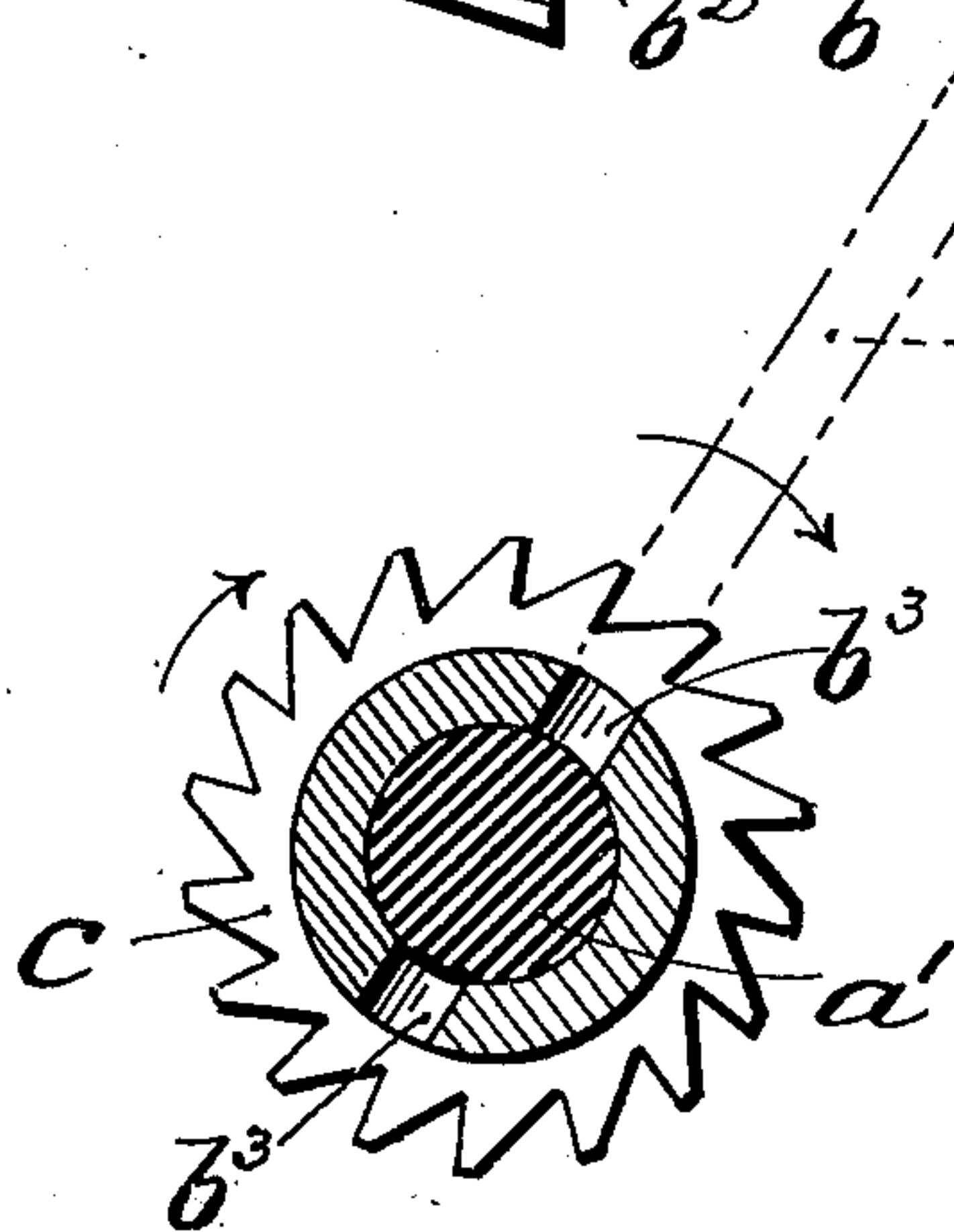
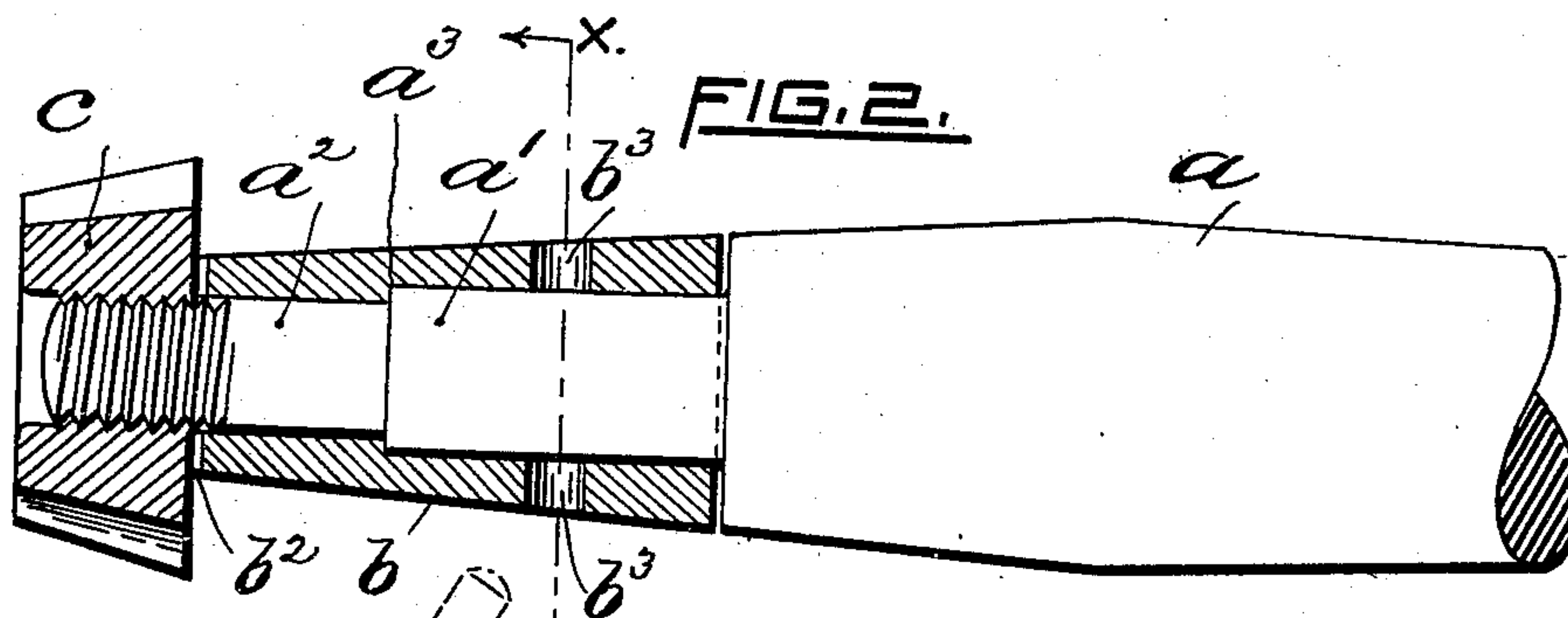
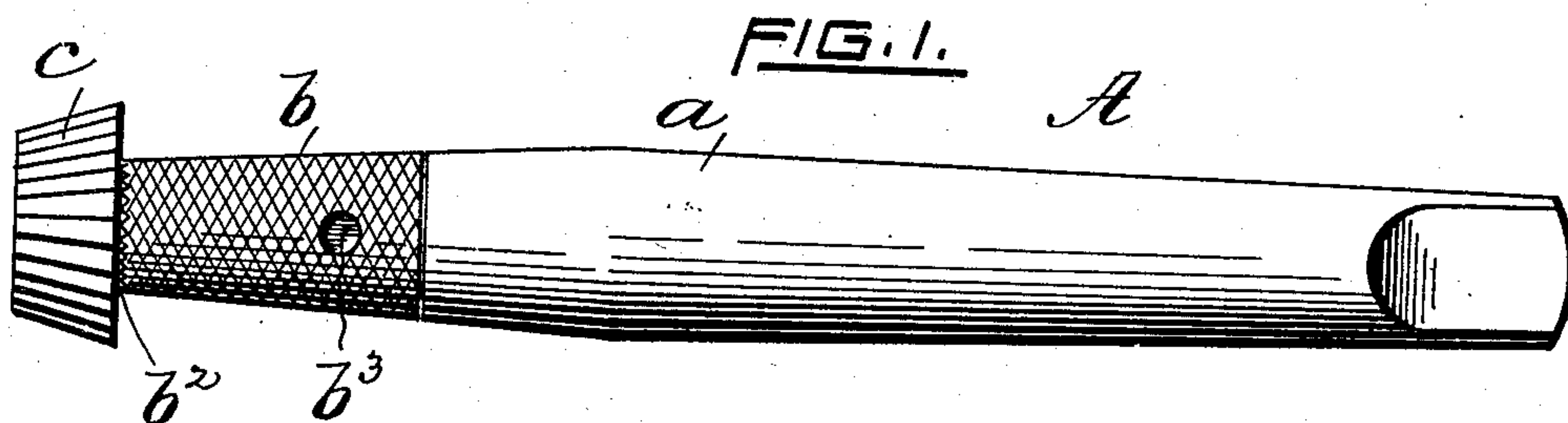


FIG. 3.

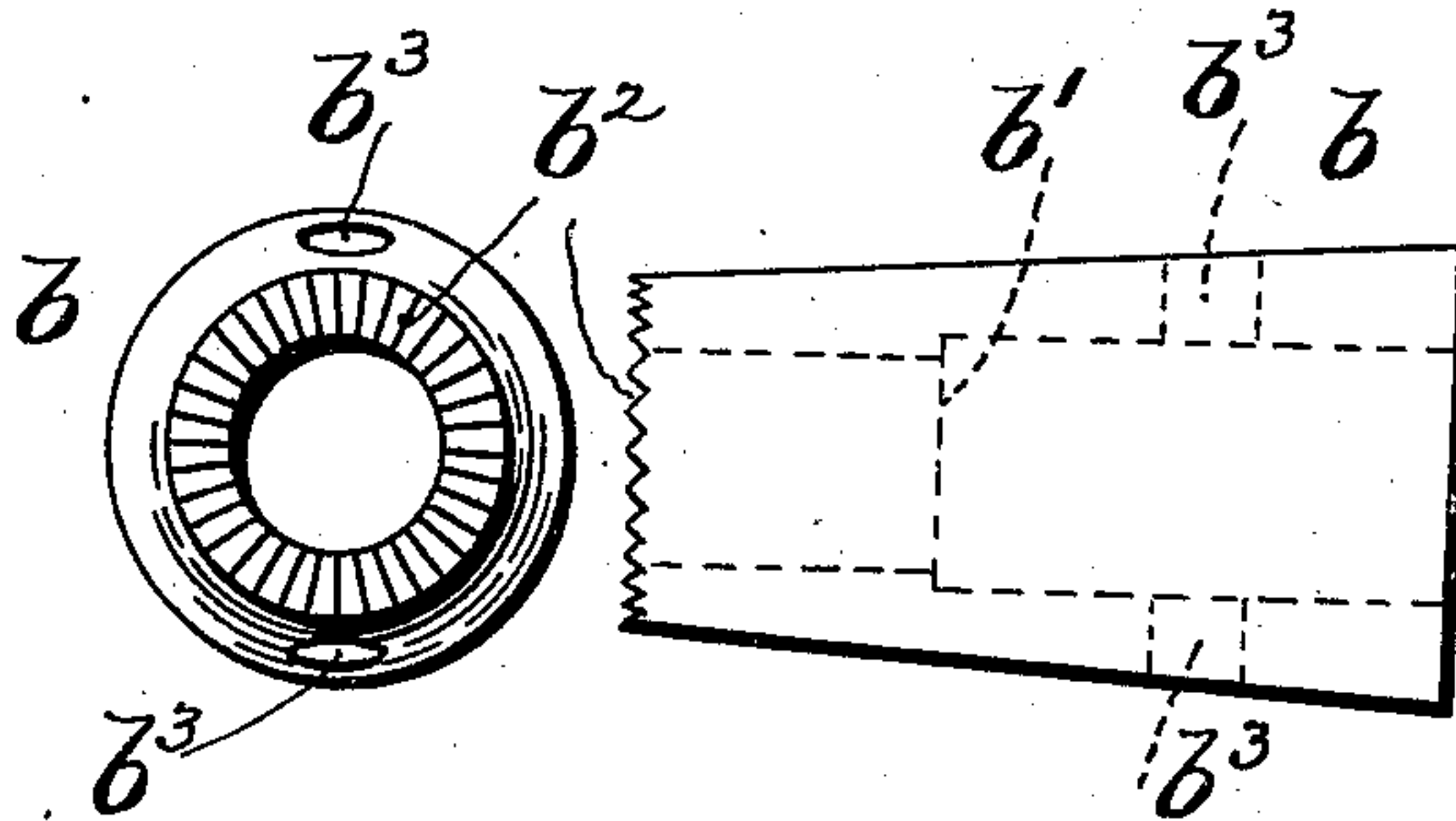


FIG. 5.

FIG. 4.

WITNESSES.

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RELEASING SCREW-ARBOR FOR MILLING-MACHINES AND THE LIKE.

No. 842,787.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed January 30, 1906. Serial No. 298,667.

To all whom it may concern:

Be it known that I, WILLIAM H. HOLT, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Releasing Screw-Arbors for Milling-Machines and the Like, of which the following is a specification.

10 In the ordinary construction of a screw-arbor for a milling-machine the cutter is screwed upon the threaded end portion of the arbor, and after the tool is in use the cutter becomes so firmly secured upon the arbor
15 that it is very difficult to remove the cutter when necessary to have the same reground or otherwise, the common method being to strike against the face of one of the cutter-teeth in order to unscrew both members apart,
20 and which procedure frequently results in a broken cutter.

My invention consists of a milling-tool whose arbor has reduced concentric portions, so as to provide a shoulder therebetween and
25 one of the reduced portions screw-threaded to engage thereby with the toothed cutter, and a sleeve loosely mounted upon the reduced portions of the arbor and having a shoulder to abut the shoulder of the latter so
30 arranged that a partial turning of the sleeve causes the same to impinge against and hold the cutter firmly in position upon the arbor or to release from contact with the cutter in an expeditious manner.

35 In the accompanying sheet of drawings, Figure 1 represents a side elevation of a milling-arbor as embodying my improvement. Fig. 2 is a partial enlarged view, partly in section and partly in elevation, showing the
40 relative position of my improved means for securing or releasing engagement with the cutter of the arbor. Fig. 3 is a cross-sectional view taken in line $x x$ of Fig. 2. Fig. 4 is a side elevation of my improved sleeve mem-
45 ber, and Fig. 5 represents the friction or holding end of the same.

Like reference characters indicate like parts.

50 A designates the tool as a whole, comprising the arbor a , my improved member b , and the common disk cutter c , respectively.

The arbor a has reduced concentric portions a' and a'' in order to provide a shoulder between them, as at a^3 in Fig. 2. The exterior surface of the portion a'' of the arbor is
55 partially screw-threaded to engage thereby in the threaded opening formed in the cutter c .

My improved member b is tubular in form and bored throughout its length, so as to fit loosely upon the reduced portions a' and a'' of
60 the arbor and having a shoulder b' , Fig. 4, to abut the shoulder a^3 of the same. One end of this tubular member b has a serrated surface b^2 , arranged to contact upon the rear
65 face of the cutter c , and said sleeve is provided with two openings b^3 b^3 , formed near its opposite end to receive a stem d , as indicated by broken lines in Fig. 3.

The threaded portion of the arbor is of a length to extend inwardly of the serrated end
70 of the sleeve b , as shown in Fig. 2.

I show the arbor formed with a left-hand screw-thread and the teeth of the cutter as arranged for a right-hand boring or cutting.

In mounting the cutter upon the arbor it
75 is first screwed up in the direction indicated by the arrow in Fig. 3 until it contacts with the adjacent serrated end of the sleeve, after which the stem or rod d (indicated by broken lines in said figure) is inserted in an opening
80 b^3 of said sleeve in order to turn the latter in the arrow direction, and thereby cause said sleeve to impinge against and hold the cutter in a powerful fixed position upon the arbor.

When it is desired to remove the cutter
85 from the arbor, a slight pressure exerted upon the rod d in the reverse direction to that above described causes the sleeve to instantly release from frictional contact with the cutter, after which the latter may be readily un-
90 screwed from its position upon the arbor.

It is apparent that my device affords a construction that is simple, cheap, and effective, and readily applied to arbors of milling-
95 machines and the like.

What I claim, and desire to secure by Letters Patent, is—

The combination of a milling-tool whose arbor has reduced concentric portions forming a shoulder therebetween and the outer
100 one of which portions is screw-threaded; a toothed cutter provided with a screw-thread-

ed opening to engage thereby the threaded portion of the arbor; a sleeve loosely mounted upon the reduced portions of the arbor, and having a shoulder to abut the shoulder of the latter, and said sleeve provided with a serrated end adjacent the toothed cutter, substantially as set forth.

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

WILLIAM H. HOLT.

Witnesses:

FRANK HOLLAND,
GEO. W. CAMPBELL.