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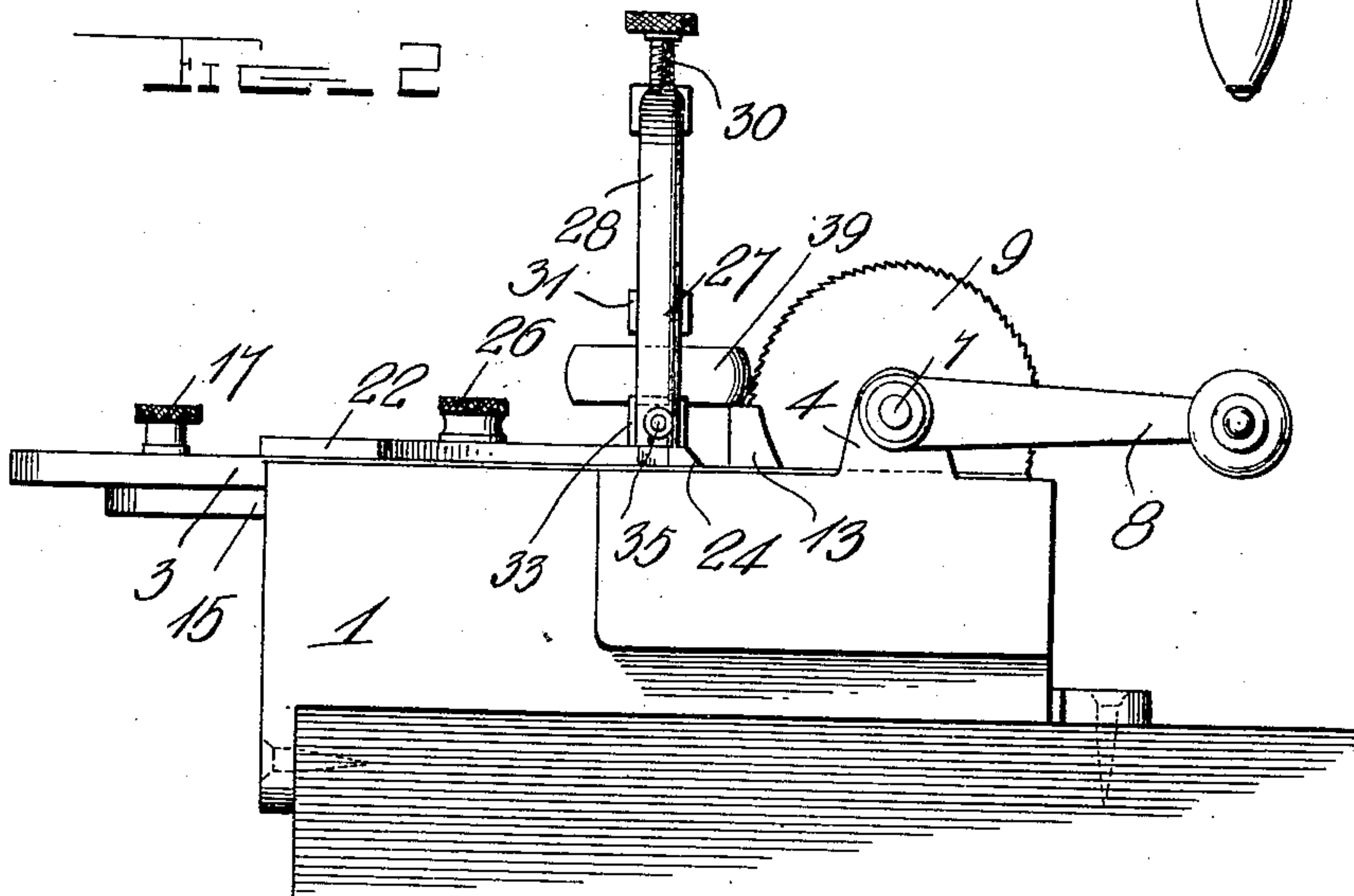
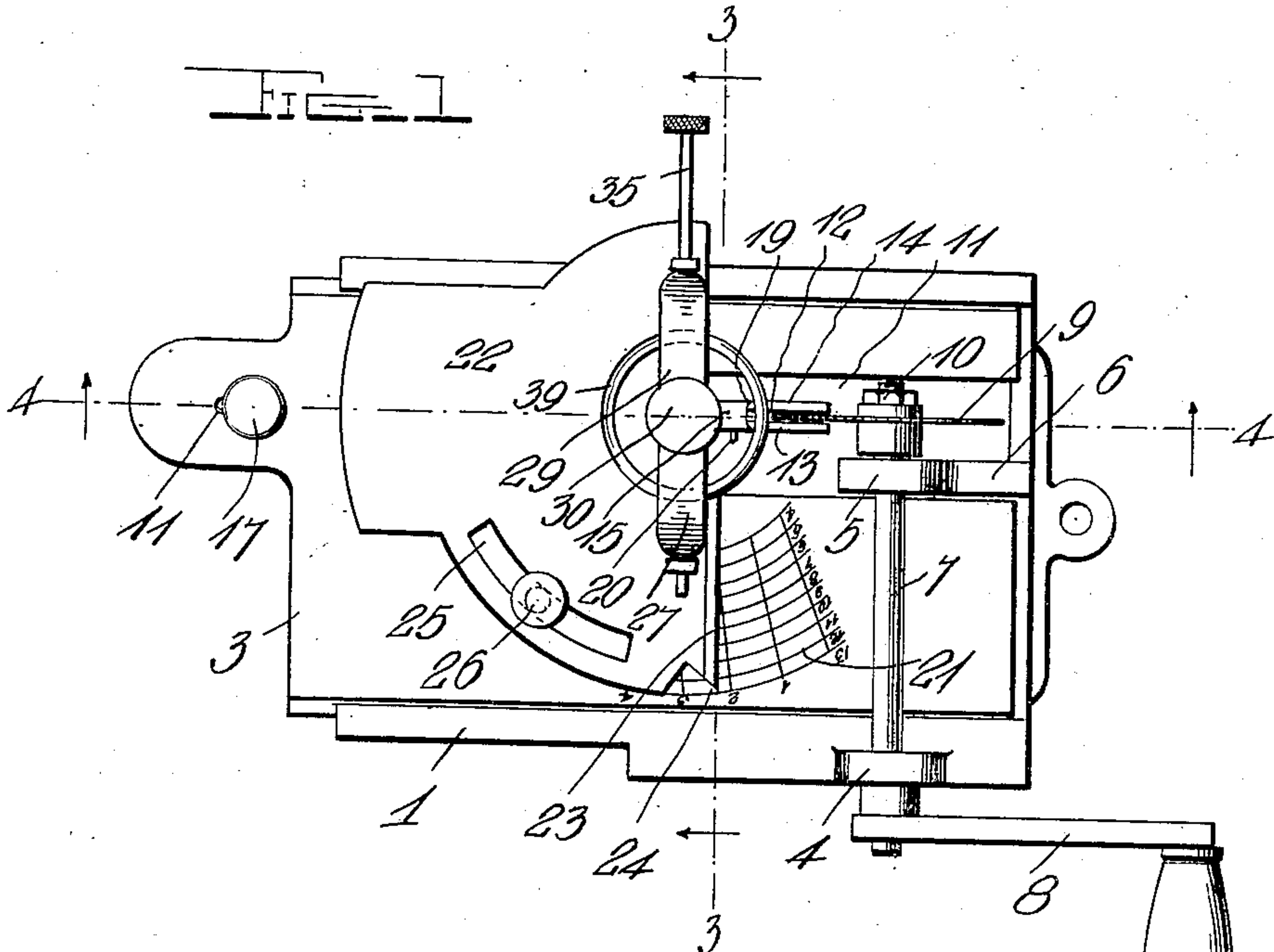
RING CUTTING MACHINE.

APPLICATION FILED OCT. 13, 1910.

991,710.

Patented May 9, 1911.

2 SHEETS—SHEET 1.



Witnesses

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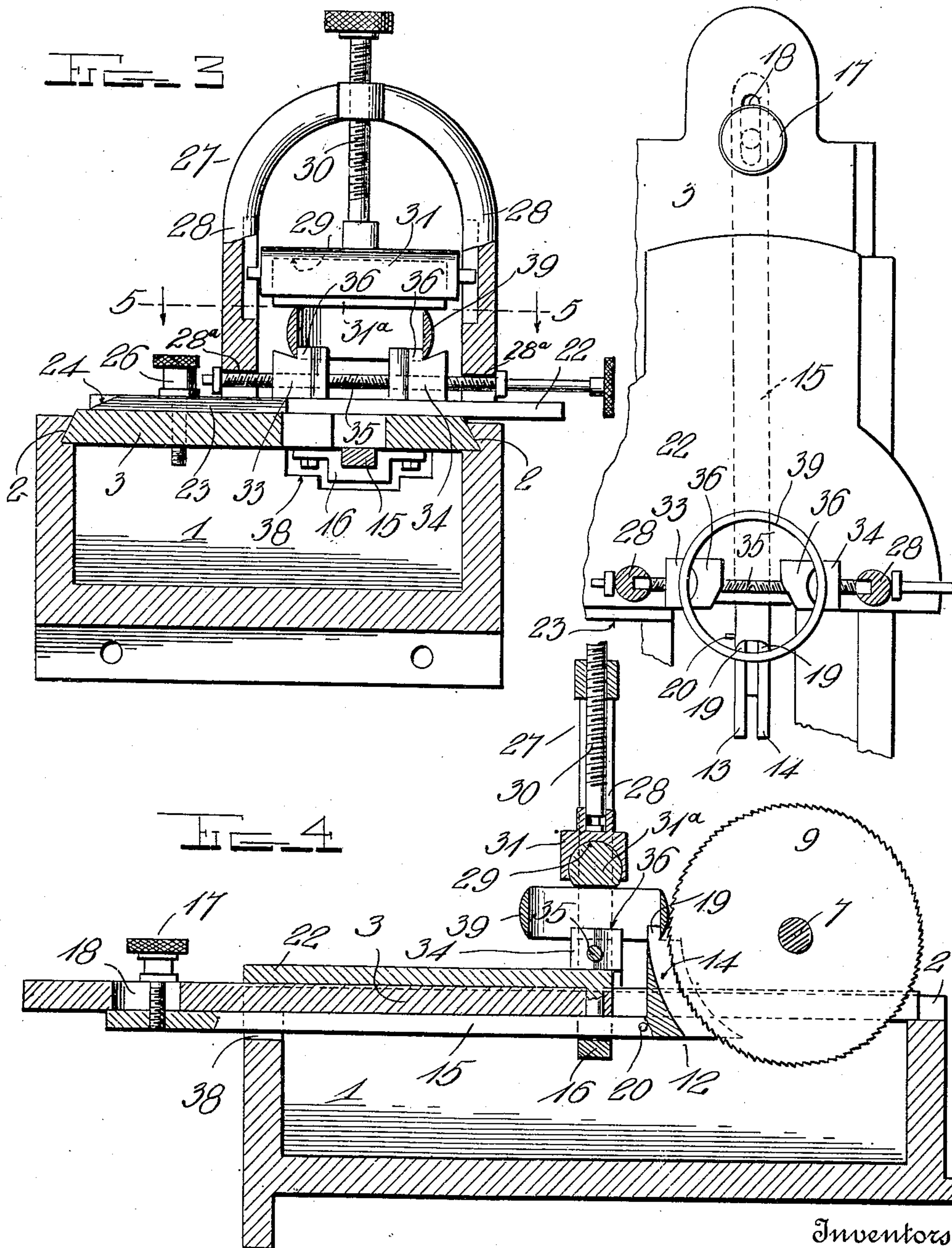
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# UNITED STATES PATENT OFFICE.

JOHN M. FLUGSTAD AND DAVID A. BISHOP, OF HAMILTON, MONTANA.

## RING-CUTTING MACHINE.

991,710.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed October 13, 1910. Serial No. 586,945.

*To all whom it may concern:*

Be it known that we, JOHN M. FLUGSTAD and DAVID A. BISHOP, citizens of the United States, residing at Hamilton, in the county of Ravalli and State of Montana, have invented certain new and useful Improvements in Ring-Cutting Machines; and we do 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.

This invention relates to an improved ring cutting or sizing machine especially designed for the use of jewelers.

The object of the invention is to provide a machine of this class which saves time and metal, and by the use of which a joint may be made without filing and which accurately measures the size of the piece to be cut out.

With this and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:—Figure 1 represents a top plan view of this improved machine with the parts arranged in operative position; Fig. 2 is a side elevation thereof; Fig. 3 is a transverse section taken on the line 3—3 of Fig. 1; Fig. 4 is a longitudinal section taken on the line 4—4 of Fig. 1 looking in the direction of the arrows, and, Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 3 showing a top plan view of the ring support.

In the embodiment illustrated, a box-like receptacle or casing 1 is shown for receiving the gold cut from the ring and having under cut longitudinally extending grooves as 2 arranged on the inner faces of the upper ends of the side members thereof to receive and form guides for a sliding table 3 which when in normal position forms a cover for the casing. This casing may be provided with any suitable means for securing it to a support, and it is provided at one end with upwardly extending apertured ears or lugs 4 and 5.

The ear 4 is arranged on the upper edge near one end of one side member of the casing and the ear 5 is formed integral with a standard 6 secured within the casing inter-

mediately of the side members thereof. These lugs or ears extend in a plane above the top of the casing and have rotatably mounted therein a shaft 7 the opposite ends of which project beyond the outer faces of said ears. An operating crank handle 8 is secured to the outer end of said shaft and a disk saw 9 is fixed to the other end of said shaft outside the lug 5, being held thereon by any suitable means preferably by a nut 10.

The inner end of the sliding table 3 is provided with a cutout portion 11 to receive the saw 9. Mounted to slide longitudinally within this recess or cutout portion 11 is a ring support 12, preferably formed of two laterally spaced plates 13 and 14 secured to one end of a bar 15 which is mounted on the lower face of the table 3, being preferably guided at one end in a keeper 16 and having a clamping screw 17 secured to the other end thereof and extending through a longitudinal slot 18 formed in the outer or rear end of the table 3 and which is designed to clamp said bar in adjusted position. The upper ends of these plates 13 and 14 are preferably provided with upwardly projecting lugs as 19 against which the inner face of the ring to be cut is adapted to abut. A pin 20 extends laterally from one of the plates 13 or 14 in position to engage the keeper 16 for limiting the rearward movement of the bar 15.

An index 21 is arranged on the upper face of the table 3 on one side of the cut-out portion thereof and the spaced concentric lines numbered 4 to 13 indicate the size of the ring operated on and the cross lines indicate the size of the piece to be cut out of the ring being operated upon.

A substantially semi-circular ring supporting table 22 is pivotally mounted on the table 3, preferably adjacent the inner end of the recessed portion thereof and is adapted to swing in a horizontal plane on said table 3. This semi-circular table 22 has the straight edge 23 thereof beveled and provided with a pointer 24 for coöperation with the index 21 for measuring the size of the piece to be cut from the ring. This plate 22 is also provided on one side thereof adjacent its periphery with a segmental slot 25 through which a set screw 26 projects and is engaged with a screw threaded aper-



ture in the table 3 being designed to lock said table 22 in adjusted position on the table 3.

An arched or inverted U-shaped member 27 extends upwardly from the table 22 adjacent the straight edge thereof and the legs as 28 thereof are spaced a suitable distance apart, and the cross bar thereof has a vertically disposed clamping screw 30 operable therein and secured at its lower end to a clamping bar 31, the opposite ends of which are slidably engaged with the legs as 28, said ends being preferably reduced and mounted in longitudinally extending slots formed in the inner faces of said legs 28. This bar 31 has a longitudinally extending recess or socket 29 in its lower face which is semi-circular in cross section and designed to receive a clamping bar 31<sup>a</sup> having its upper face curved to fit said recess and to roll or turn transversely therein to adapt it to automatically adjust itself to clamp rings of different shapes, its lower face being flat to engage the upper edge of the ring being cut. This member 31<sup>a</sup> is preferably held in said bar 31 by means of the curved edges of the socket 29. Arranged on the upper face of the table 22 between the legs 28 are two ring supporting blocks 33 and 34 which are adjustable to and from each other to adapt them to support rings of varying sizes, said blocks being preferably provided with left and right screw threaded apertures or bores extending longitudinally therethrough with which are engaged a rotatably mounted operating rod 35 which is fitted in recesses 28<sup>a</sup> in the lower ends of the legs 28 of the member 27. This rod 35 is provided with left and right screw threads whereby on the turning of said rod in one direction or the other, these blocks may be moved toward or away from each other. As shown clearly in Figs. 3 and 5, the upper faces of these blocks 33 and 34 are provided at their inner ends with upwardly projecting lugs as 36 adapted to engage the inner face of diametrically opposite sides of the ring to be cut, and when the rod 35 is adjusted the ring is centered on said blocks, as shown clearly in Fig. 3 and one edge of said ring rests on the support 12 which holds the ring firmly against the saw and prevents it from springing downward while being cut. These lugs 36 have their outer corners cut off and the edges thereof between said corners curved inwardly to provide spaced ring engaging means to hold said ring reliably against lateral movement. The front ends of these lugs 36 are cut away as shown in Fig. 5 to provide sufficient space for the passage of the saw. The upper faces of the blocks 33 and 34 adjacent the lugs 36 are inclined upwardly and outwardly to form means for preventing the ring from spreading while

being cut, as shown clearly in Fig. 3, being bound securely thereagainst by the bar 31<sup>a</sup>. These blocks 33 and 34 form a centering device to cause the saw to point to the center of the ring when the parts are arranged in operative position.

The rear end of the casing 1 is preferably recessed as shown at 38 to permit the keeper 16 to slide freely therethrough when the table 3 is being inserted or removed from said casing, and the set screw which fastens the circular table 22 to the table 3 depends below the inner face of the table 3 and serves as a stop for limiting the outward movement of said table 3.

In the use of this machine, the ring as 39 to be cut is first clamped between the bar 31<sup>a</sup> and the blocks 33 and 34 by means of the clamping screw 30, and the rod 35 is then actuated to center the ring on said blocks relatively to the saw. The operator must first know the size of the ring to be cut; for instance, suppose a No. 7 ring is to be cut to reduce it to a No. 6; the screw 26 is loosened and the pointer 24 is set at the point 13 on the index 21 and the screw 26 tightened. The saw is then manipulated to cut through the ring, after which the screw 26 is again loosened and the table 22 swung back to bring its knife edge 23 at the point where the line 1 crosses the line 7. The screw 26 is then tightened and the size of the piece to be cut from the ring 39 having thus being determined, the saw is again manipulated to cut through the ring. The piece so removed reduces the ring one size, and when the edges thereof are connected together a ring No. 6 will be the result. If the ring is desired to be cut more than one size, the table No. 22 is swung farther around to the desired point indicated by lines 1, 2, 3 and 4. The point where these lines cross the concentric lines is the point where the knife edge No. 23 is to be set. The longitudinally adjustable ring support 12 is then moved in position to support the lower edge of the ring 39 and is secured in said position by means of the clamping screw 17. The table 3 may be then moved longitudinally toward or away from the saw 9 to cause the ring 39 to bear firmly against the cutting edge thereof, and it is held in this position by one hand of the operator while the other hand is used to turn the crank handle 8 whereby the saw is rotated.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the appended claims.



We claim as our invention:

1. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a member slidable longitudinally on said structure, a table mounted to swing in a horizontal plane on said sliding member, ring clamping means carried by said table, and means for centering a ring to cause said saw to point directly to the center thereof including means for engaging the inner walls of the ring to be cut, said last mentioned means being adjustable to fit rings of varying sizes.

2. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a member slidable longitudinally on said structure, a table mounted to swing in a horizontal plane on said sliding member, ring clamping means carried by said table, means for centering a ring to cause said saw to point directly to the center thereof, and means for determining the size of the piece to be cut from a ring.

3. A ring cutting machine comprising a casing, a rotary saw mounted therein and projecting above its upper face, a table slidable longitudinally on said casing, a ring support mounted on said casing to swing in a horizontal plane, means for locking said support in adjusted position, and laterally adjustable ring clamping means mounted on said horizontally swinging support and provided with means for engaging the inner walls of a ring to be cut.

4. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a member slidable to and from the cutting edge of said saw, a longitudinally adjustable member mounted on said sliding member for supporting one edge of a ring to be cut, a laterally adjustable member mounted on said sliding member, ring supporting blocks mounted for adjustment to and from each other on said laterally moving member, and means for clamping a ring to said blocks.

5. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a member slidable to and from the cutting edge of said saw, a longitudinally

adjustable member mounted on said sliding member for supporting one edge of a ring to be cut, a laterally adjustable member mounted on said sliding member, ring supporting blocks mounted for adjustment to and from each other on said laterally moving member, means for clamping a ring to said blocks, and means for determining the size of the piece to be cut from the ring.

6. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a horizontally swinging member mounted adjacent said saw, laterally spaced standards mounted on said member, ring supporting blocks mounted between said standards and adjustable toward and from each other and provided with a ring engaging means, and means for clamping a ring to said blocks.

7. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a horizontally swinging member mounted adjacent said saw, laterally spaced standards mounted on said member, ring supporting blocks mounted between said standards and adjustable toward and from each other and provided with supports for rings of varying sizes, means for clamping a ring to said blocks, and means for supporting the lower edge of the ring to be cut.

8. A ring cutting machine comprising a supporting structure, a rotary saw mounted thereon, a horizontally swinging member mounted adjacent said saw, laterally spaced standards mounted on said member, ring supporting blocks mounted between said standards and adjustable toward and from each other and provided with supports for rings of varying sizes, means for clamping a ring to said blocks, and longitudinally adjustable means for supporting the lower edge of a ring to be cut.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN M. FLUGSTAD.  
DAVID A. BISHOP.

Witnesses:

THOMAS J. EDWARDS,  
ROBERT A. O'HARA.