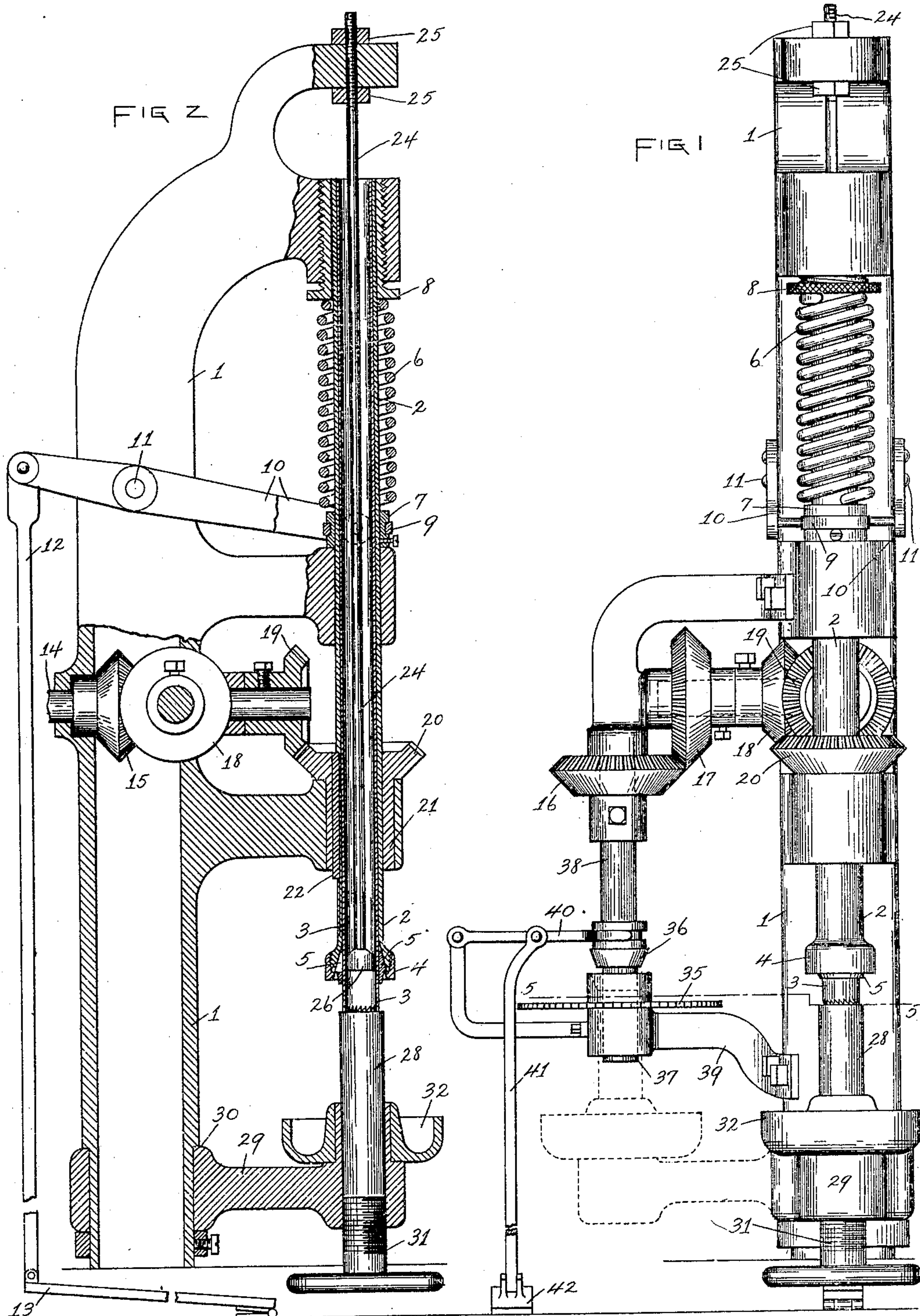


P. A. REISLER.
BUTTON SAWING MACHINE.

APPLICATION FILED OCT. 27, 1904.

2 SHEETS—SHEET 1.



WITNESSES
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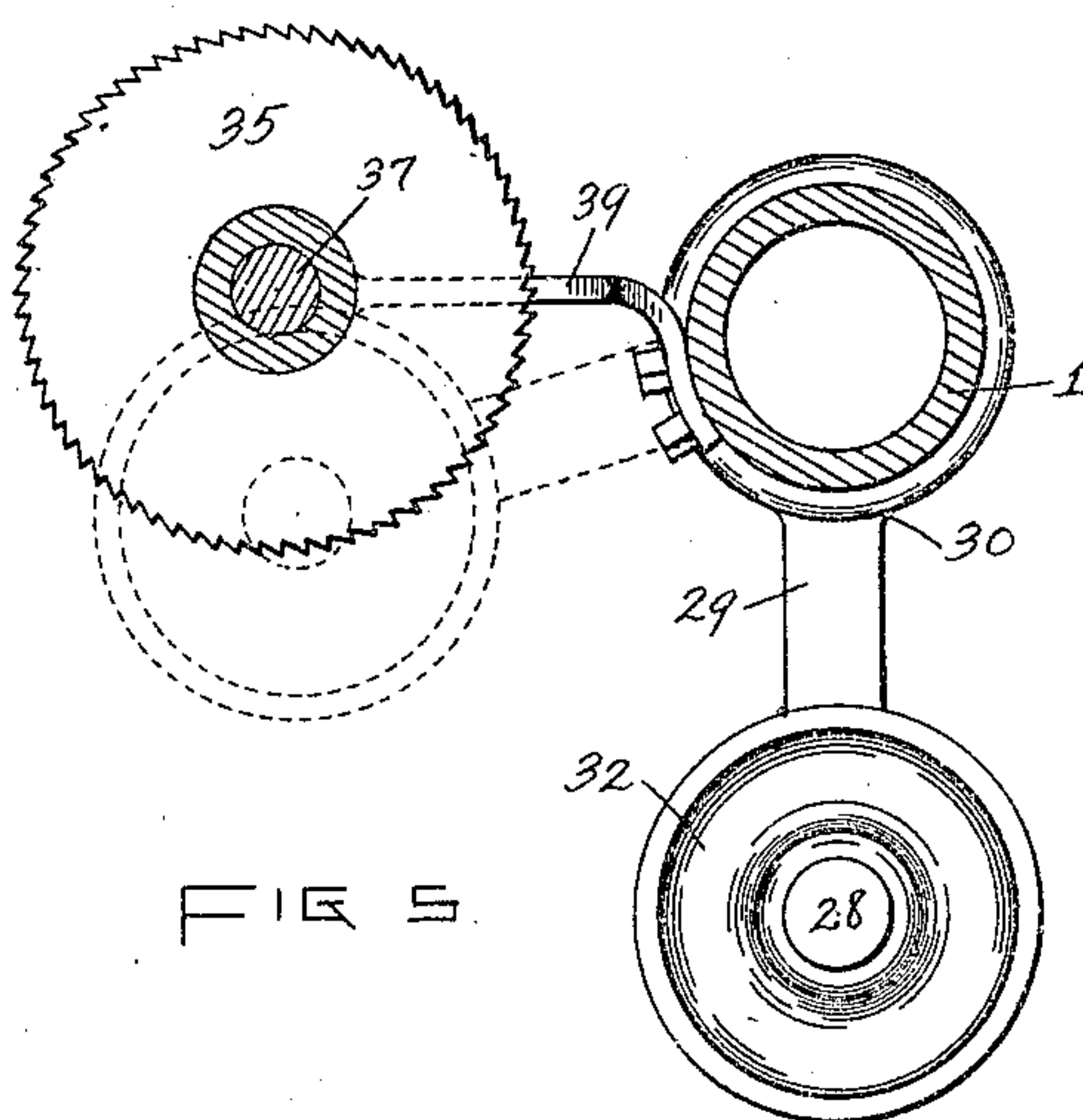
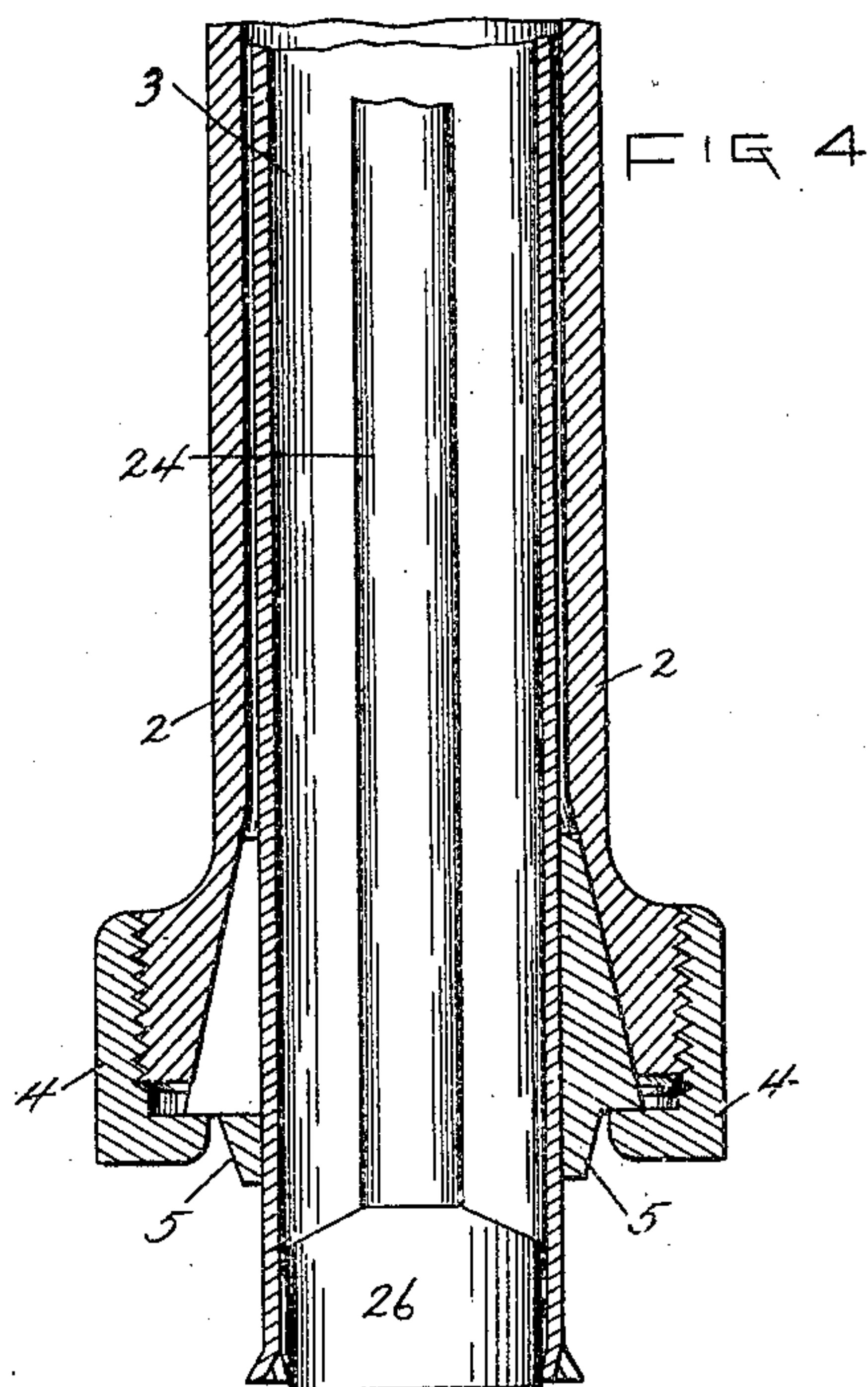
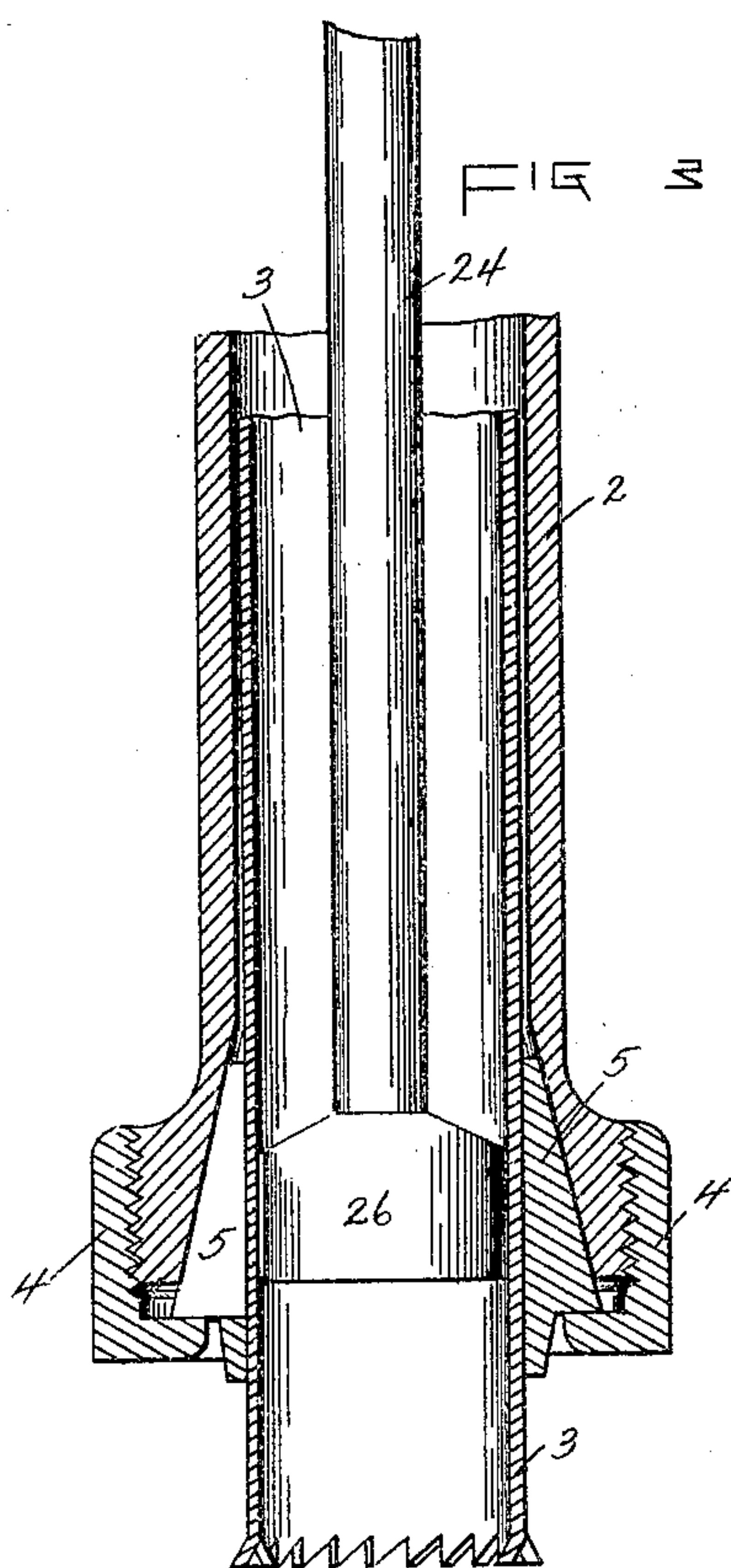
No. 807,776.

PATENTED DEC. 19, 1905.

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2 SHEETS—SHEET 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

PHILLIP A. REISLER, OF AMSTERDAM, NEW YORK, ASSIGNOR OF TWO-THIRDS TO HORACE M. HICKS AND WILLIAM H. TERWILLIGER, OF AMSTERDAM, NEW YORK.

BUTTON-SAWING MACHINE.

No. 807,776.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed October 27, 1904. Serial No. 230,170.

To all whom it may concern:

Be it known that I, PHILLIP A. REISLER, a citizen of the United States, residing at Amsterdam, county of Montgomery, and State of New York, have invented certain new and useful Improvements in Button-Sawing Machines, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures.

Figure 1 of the drawings is a view in front elevation of my improved button-sawing machine. Fig. 2 is a view, partly in elevation and partly in central vertical section, of the same. Fig. 3 is a view in central vertical section of the cutting end of the saw with its chuck or holder and the blank-ejecting and tooth-resetting mechanism, said figure being drawn on an enlarged scale. Fig. 4 is a similar view showing the saw and its chuck or holder elevated to bring into operative position the blank-ejecting and tooth-resetting mechanism. Fig. 5 is a horizontal section taken on the broken line 5 5 in Fig. 1.

My invention relates more particularly to machines for sawing out blanks in the manufacture of buttons from shell and similar material, employing for the purpose a cylindrical saw.

Certain objects of the invention are to secure uniformity in the size of the product, to facilitate the adjustment of the saw and the setting and resetting of its teeth, to facilitate the ejection of the disks or blanks cut by the saw, and to renew from time to time the surface of the work-supporting bed.

Referring to the drawings, wherein the invention is shown in its preferred form, 1 is the frame of the machine, provided with bearings, wherein is supported in vertical position a rotatory cylinder 2, within which is inclosed a cylindrical saw 3, adapted to fit loosely therein. At its lower end the cylinder 2 is provided with chuck mechanism for maintaining said cylinder and saw in fixed relation

with each other. Said chuck mechanism comprises a nut 4, adapted to be screwed upon the lower end of the cylinder 2 into engagement with the tapered split sleeve 5, which incloses the saw and is adapted to fit within the lower end of the cylinder 2, which is flared to receive said sleeve.

The cylinder 2 is capable of rotative and longitudinal reciprocating movements in its bearings, and a downward movement thereof is induced by a coil-spring 6, inclosing said cylinder and adapted to bear at its lower end upon a sleeve 7, fixed upon the cylinder, and at its upper end upon a screw-bushing 8 in the uppermost bearing for said spindle, by adjustment of which screw the force of the spring can be varied as desired. The sleeve 7 is provided with a circumferential groove within which is loosely located a ring or collar 9, with which is pivotally connected one end of each of a pair of levers 10, fulcrumed at 11 upon the frame of the machine and connected at their other ends with the link 12, extending downwardly to a treadle 13. By depressing the treadle 13 the cylinder 2, with the saw mounted therein, can be raised in opposition to the force of the spring 6, and upon the treadle 13 being relieved from pressure the spring will automatically return the cylinder and saw to their lowermost position, which is determined by the engagement of the sleeve 7 with the intermediate frame-bearing. The vertical movements thus accomplished are independent of the rotative movement of the cylinder and saw. Rotary movements are imparted to the cylinder and saw from the drive-shaft 14 through a train of beveled gears 15, 16, 17, 18, 19, and 20, the gear 20 being provided with a sleeve extension or hub 21, which occupies the lowermost frame-bearing and is adapted to rotate therein, while the cylinder 2 is capable of reciprocating slide movements through said gear and hub, being connected to rotate therewith by the feather 22.

Extending longitudinally within the cylindrical saw is a rod 24, mounted upon the frame of the machine in fixed position by means of a pair of nuts 25 on its upper screw-threaded end, which rod is provided on its lower end with an enlarged head 26, though slightly smaller in diameter than the interior of the cylindrical saw. The rod 24 is so ad-

justed that said head 26 is adapted to be brought to the lower end of the cylindrical saw when the cylinder 2 and the saw are elevated by means of the foot-treadle 13 in the manner above described, permitting the accomplishment of two functions by said head.

It will be understood that in cutting the disks or blanks from a piece of shell or the like by means of a cylindrical saw each disk or blank while being cut enters the saw-cylinder, from which it must be removed, either by ejection at the end through which it entered or by being fed along by the successive blanks until it emerges from the opposite end of the saw. In the machines constructed as above described the saw is moved to and from its work by means of the spring 6 and treadle 13 and intermediate mechanism, as above described, and the movement of the saw thus accomplished causes the ejection of the blanks by engagement with the head 26 of the rod 24. In sharpening and setting the saw for this work it is customary to bend the alternate teeth of the saw out of line with each other to cause the saw to form a kerf of a width adapted to afford the necessary clearance for the saw in its work. It is very difficult in thus setting the teeth to have all of the inwardly-set teeth exactly the same distance from the axis of the saw, and it is likewise difficult to always set the teeth so as to form button-disks of the same size. I have shown the head 26 of the rod 24 of the exact diameter of the button blank or disk desired and of a size adapted to almost fill the interior of the cylindrical saw, so that after the teeth of the saw have been set in the usual manner and the saw replaced in the machine the inwardly-set teeth can be reset equidistant from the axis of the saw and in the exact circumferential position desired for accurate work by operating the foot-treadle 13 to cause the saw to be elevated so as to bring its toothed end above the lower end of the head 26, whereby the inwardly-set teeth are spread by engagement with said head and reset in the proper position. Should any of the teeth of the saw be inwardly bent at any time out of their proper position, they can be reset in the manner just described.

The work to be operated upon by the saw is supported upon a bed formed by a wooden block 28, mounted upon a bracket 29, pivoted upon the frame of the machine at 30, said bracket being formed with a vertical aperture adapted to receive said wooden block and with a screw-support 31 for said block, whereby the block can be elevated from time to time to compensate for the removal of its upper end on account of wear in the operation of the machine. Also mounted upon the bracket 29, is a receptacle or tray 32, adapted to receive the button-disks as they fall from the saw when ejected by the head of the rod 24. The bracket 29, being pivotally mounted

upon the frame of the machine, can be swung in a horizontal plane to and from a position beneath the saw. When it is desired to remove the saw, said bracket can be swung out of line therewith and the saw drawn downwardly out of the cylinder 2 when the chuck has been opened by loosening the nut 4.

In the operation of cutting out the disks or blanks the bracket 29 is swung into position beneath the saw and the work, which may be a piece of shell or like material, is supported upon the upper end of the wooden block 28 during the sawing operation. As the saw cuts through the shell or stock it engages to a greater or less extent with the upper end of the wooden block, which after a time becomes worn and broken and requires to have its upper surface renewed from time to time. This I am able to accomplish by locating at one side of the machine a disk-saw 35 in a horizontal position in the path of the upper end of the wooden block when the same is swung away from its position beneath the saw, as indicated by dotted lines in Fig. 5. When the upper end of the wooden block has become so worn as to require renewal, the block 28 is forced upwardly in the bracket by means of the screw 31 to the desired distance, and the bracket is then swung toward the saw, bringing the upper end of the wooden block into engagement with the saw, which, being operated, removes the worn upper end of the block, leaving a freshly-cut surface thereon.

The saw may be operated in any known manner; but as a safety measure I prefer to operate the same by means of a friction-clutch 36, whereby the spindle 37, upon which the saw is fixed, may be operatively connected with the shaft 38, upon which is fixed the beveled gear 16. The saw-spindle 37 is rotatively mounted in the bracket 39, fixed upon the frame of the machine. The friction-clutch is operated by means of a forked lever 40, connected by a link 41 with a treadle 42.

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

1. In a machine of the class described, and in combination, a cylindrical saw; means for rotating the same; a work-support; a rod located within the saw having a head of approximately the size of the interior of the saw-cylinder and of substantially the size of the button-blanks desired; and means for producing a relative endwise movement between said saw and head whereby said head may be brought into engagement with inwardly-displaced teeth of the saw to spread the same.

2. In a machine of the class described, and in combination, a cylindrical saw; a transversely-cutting saw at one side of the axis of the cylindrical saw operating in a plane perpendicular thereto; means for operating the respective saws; a work-supporting block; and a block-supporting bracket movable to-

ward and from said transversely-cutting saw whereby said block can be brought into engagement therewith.

3. In a machine of the class described, and
5 in combination, a cylindrical saw; a transversely-cutting saw at one side of the axis of the cylindrical saw operating in a plane perpendicular thereto; means for operating the
10 block-supporting bracket movable toward and from said transversely-cutting saw where-

by said block can be brought into line therewith; and means for producing an endwise movement of adjustment of said block upon said bracket.

In testimony whereof I have hereunto set
my hand this 21st day of September, 1904.

PHILLIP A. REISLER.

Witnesses:

WM. B. C. TERWILLIGER,
HORACE M. HICKS.