

No. 628,496.

Patented July 11, 1899.

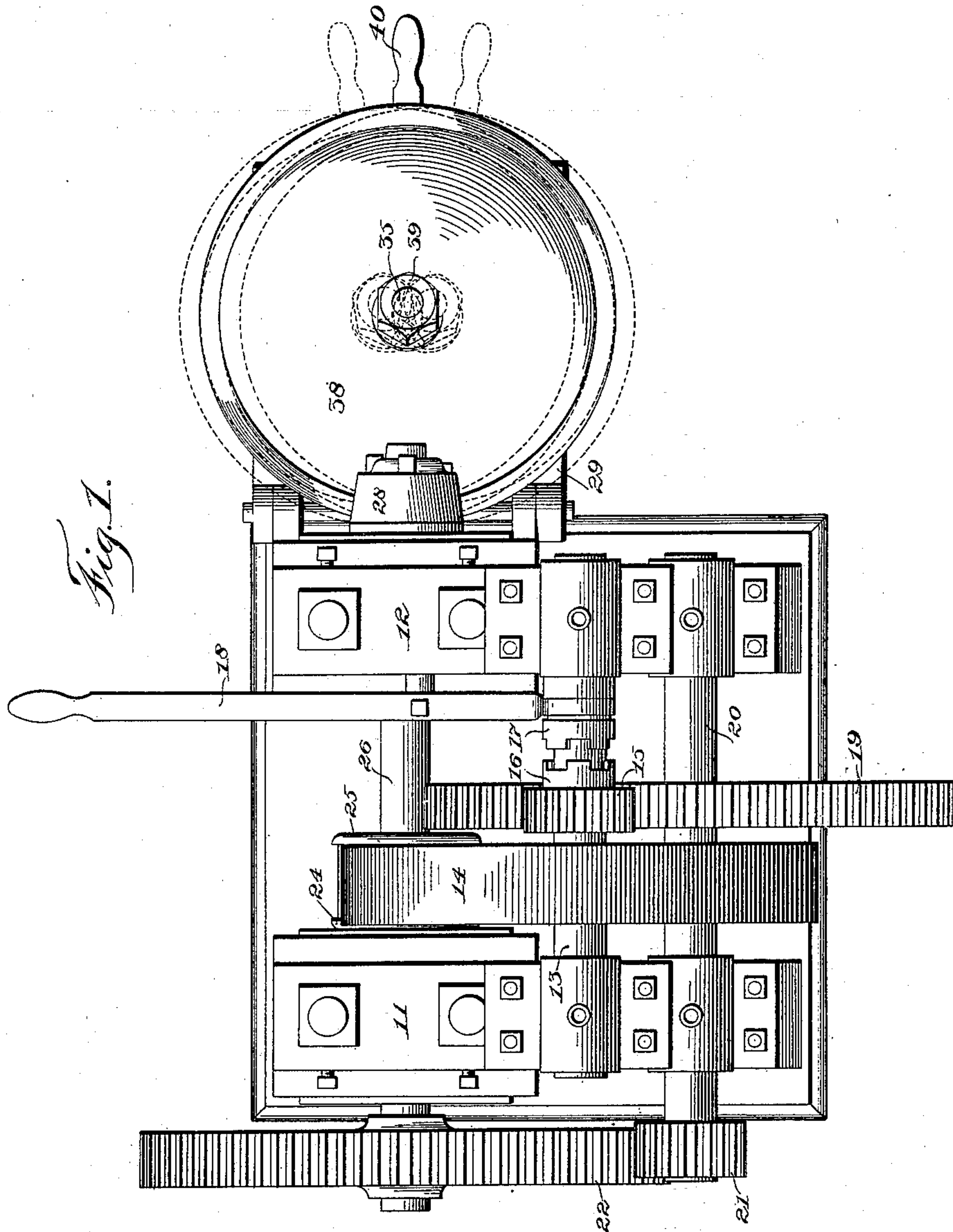
N. K. SKOW.

MACHINE FOR SHARPENING ROTARY CUTTERS.

(Application filed July 5, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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H. M. Platt.

Inventor:
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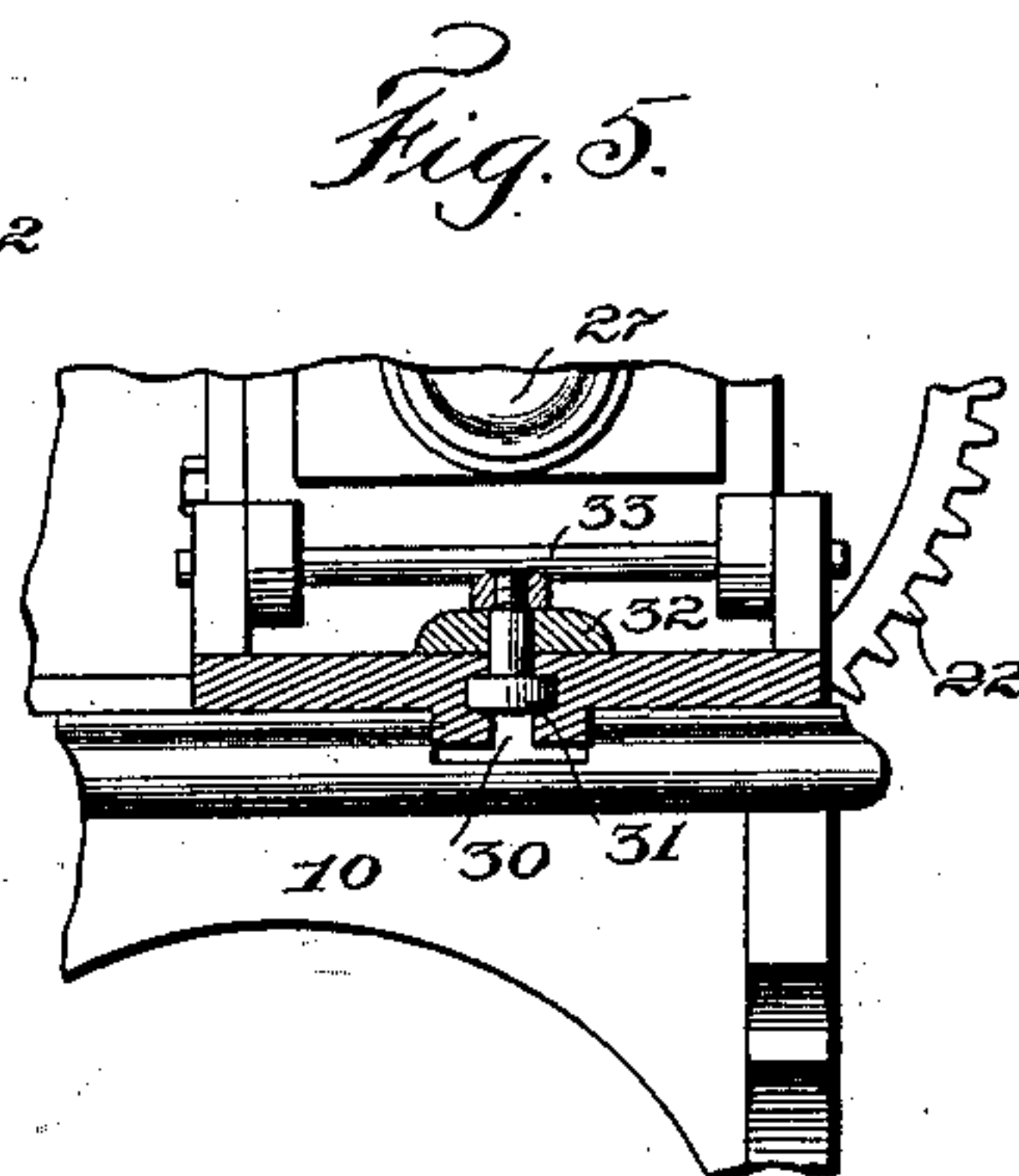
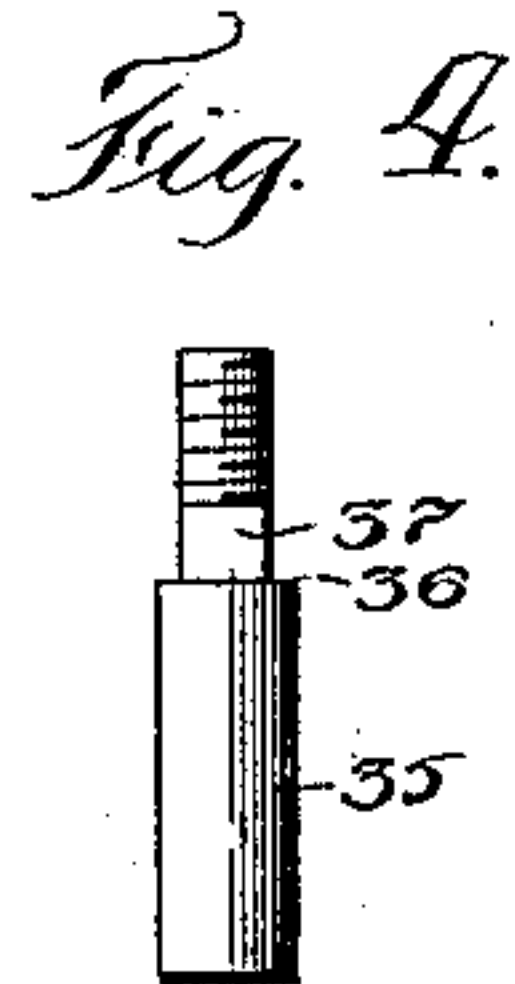
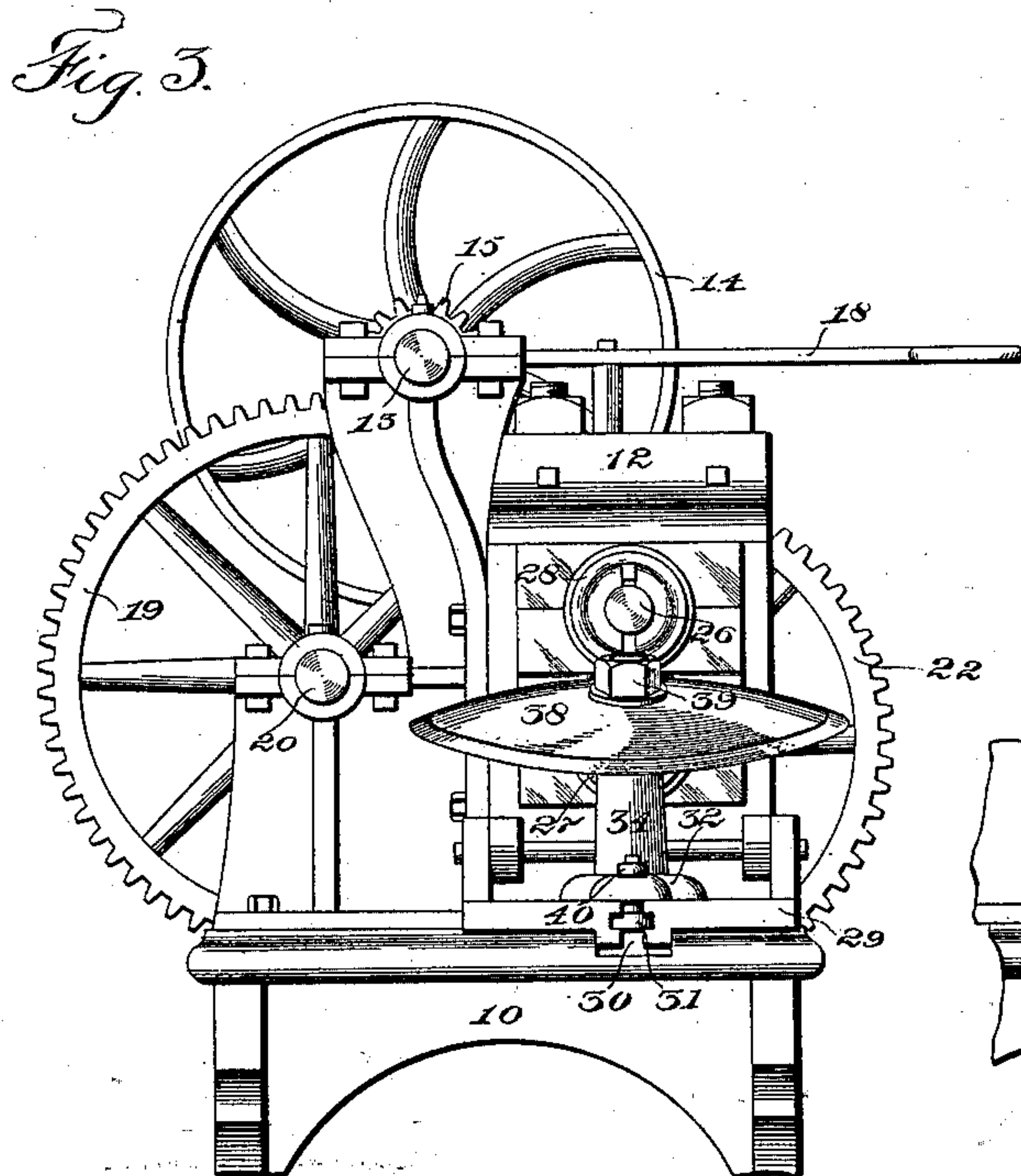
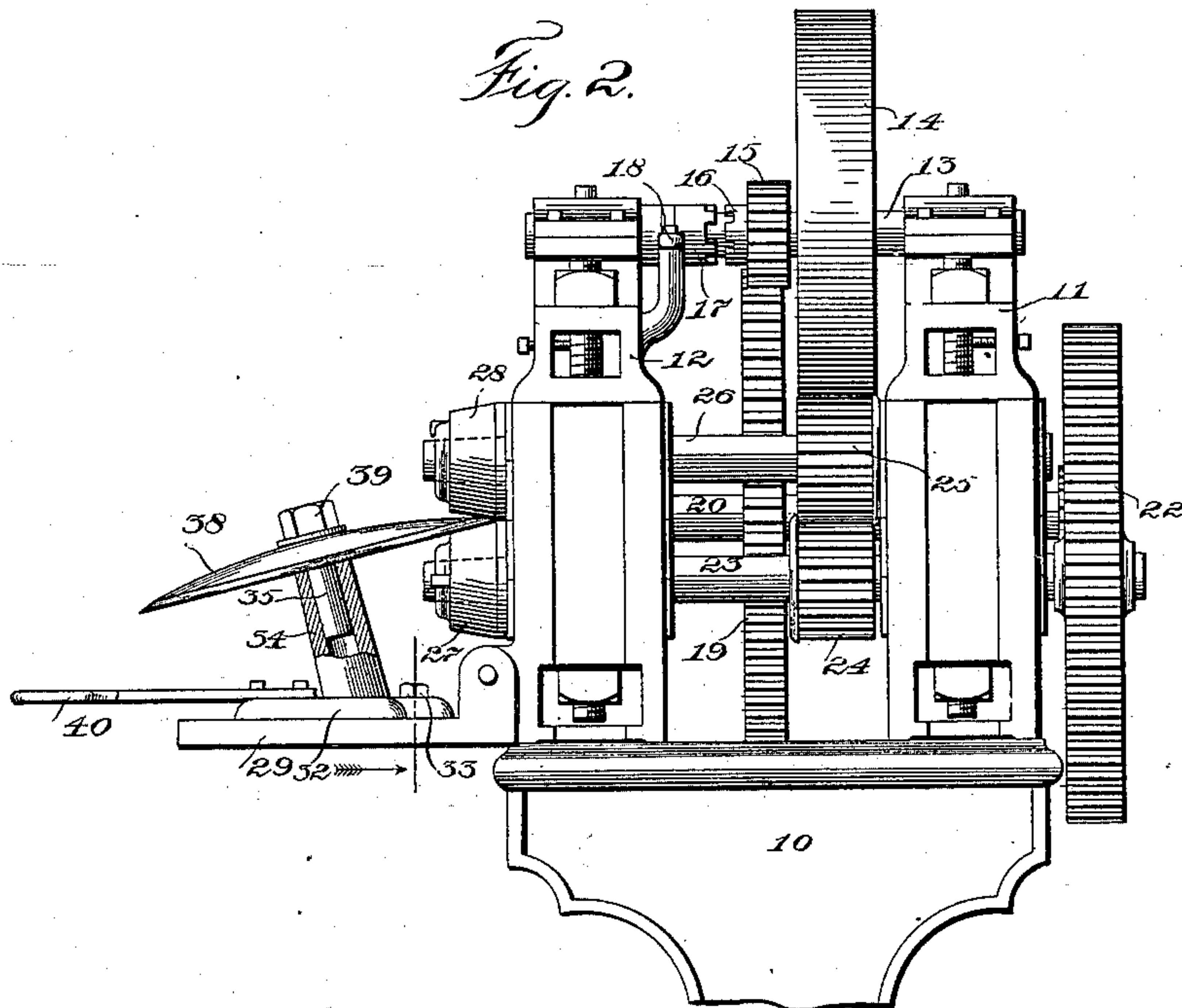
N. K. SKOW.

MACHINE FOR SHARPENING ROTARY CUTTERS.

(Application filed July 5, 1898.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
H. C. Linn
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UNITED STATES PATENT OFFICE.

NIELS K. SKOW, OF NEWTON, IOWA.

MACHINE FOR SHARPENING ROTARY CUTTERS.

SPECIFICATION forming part of Letters Patent No. 628,496, dated July 11, 1899.

Application filed July 5, 1898. Serial No. 685,197. (No model.)

To all whom it may concern:

Be it known that I, NIELS K. SKOW, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have
5 invented a new and useful Machine for Sharpening Rotary Cutters, of which the following is a specification.

The object of this invention is to provide improved means for forming beveled edges on
10 or sharpening the annular margins of rotary cutters or disks, spades, &c., by pressure thereof between rolls.

This invention consists in the improved construction of the machine for forming the margins of disk cutters by subjecting the said
15 margins to rolling pressure between rolls arranged with their axes at an angle to or in alinement with the diameter of the disk being treated.

My invention consists, further, in the construction, arrangement, and combination of mechanical elements whereby to practice the art, as hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—
25

Figure 1 is a plan of the complete machine. Fig. 2 is a side elevation of the complete machine. Fig. 3 is a front elevation of the complete machine. Figs. 4 and 5 are detail views
30 of structural elements.

In the construction and operation of the machine shown whereby to practice the art the numeral 10 designates a base or stand on which the operating parts of the machine are
35 mounted, as hereinafter described.

Machine-heads 11 12 are fixed to and rise vertically from the base 10 in parallel planes. A main shaft 13 is mounted for rotation in bearings fixed to the upper ends of the
40 heads 11 12, and a main driving-wheel 14 is fixed to said shaft and arranged to be driven by belting from a prime mover. (Not shown.) A pinion 15 is mounted loosely on the shaft 13 adjacent to the driving-wheel 14,
45 and is provided with a clutch member 16 concentric with the shaft. A clutch 17 is slidably mounted on and keyed to the shaft 13, and is manually controlled through a lever 18, fulcrumed on the machine-head 12, to engage or disengage the clutch member 16. The
50 pinion 15 meshes with a spur-gear 19 of materially-greater diameter mounted rigidly on

a counter-shaft 20, which counter-shaft is journaled in bearings on the machine-heads. A pinion 21 is mounted on one end of the
55 shaft 20 and meshes with a spur-gear 22 of materially-greater diameter fixed to one end of a lower roll-shaft 23, which roll-shaft is journaled in bearings in the machine-heads and projects at both ends from said bearings. A
60 spur-gear 24 is mounted rigidly on the central portion of the lower roll-shaft 23 and meshes with a pinion 25 of the same diameter rigidly mounted on the central portion of an upper
65 roll-shaft 26, which upper roll-shaft is journaled in bearings in the machine-heads and projects at both ends from said bearings. The roll-shafts 23 26 are parallel with and adjacent to each other, but may be in divergent planes relative to each other. Frustum-shaped rolls
70 23 26 opposite to the spur-gear 22 and are keyed against rotation thereon. The perimeters of the bases of the rolls 27 28 travel in contact with each other and in opposite directions.
75 A table 29 is hinged at one margin to the bearing 12 and extends horizontally outwardly therefrom in approximately the plane of the top of the base 10. The table 29 is provided with a slot 30 in its central portion, which slot
80 extends from a point adjacent to the hinging margin of the table to the outer margin thereof. Grooves are formed in the edges of the table 29, forming the sides of the slot, and a bolt 31 is mounted vertically in the slot with
85 the head of the bolt in the said grooves. The bolt 31 extends above the table 29 and a swivel-stand 32 is pivoted thereon, the bolt traversing the stand near one end thereof. A shoulder is formed on the bolt 31 in the
90 plane of the top of the swivel-stand, and the upper end portion of the bolt is screw-threaded to receive a nut 33, whereby to connect and confine the parts. A swivel-socket 34 is formed on and extends upwardly from the center
95 of the swivel-stand 32 and is inclined outwardly relative to the vertical plane of the machine-head 12. A swivel-stem 35 is mounted loosely and for rotation in the swivel-socket 34. The swivel-stem 35, Fig. 4, is reduced at
100 its upper end portion to form a shoulder or seat 36 and a journal 37, on which a disk 38 may be mounted for treatment. The upper extremity of the swivel-stem 35 is screw-

threaded to receive a nut 39, whereby the disk 38 may be locked to the stem. A lever or handle 40 is fixed to and extends horizontally outwardly from the swivel-stand 32.

5 By arranging the hinged table below and outside of the frame the swiveled stand can be readily adjusted to adapt the machine to be advantageously operated on plate metal of quadrangular shape and pieces of different
10 form and size as well as for disks.

In the operation of the machine herein claimed the rolls are driven through the reducing-train of gearing connected by the clutches 16 17, and the edge or margin of the
15 disk 38 is engaged and swaged by said rolls. The swivel-stand 32 may be swung laterally by manual force applied through the lever or handle 40, and in so doing the swivel-stem and disk thereon are carried through an arc
20 across or away from the line of the axes of the rolls, thereby changing the degree or extent of bevel or swaging of the disk's margin. The margin of the disk may be adjusted between the rolls by elevating the table 29 through the
25 medium of the handle 40.

I claim as my invention—

1. The machine of the class described comprising the reducing-train of gearing, the frustum-shaped rolls driven thereby, the table
30 arranged below and outside of the rolls and hinged for oscillation on a horizontal axis, the swivel-stand mounted on said table, the stem mounted in an inclined position on said

stand and means for mounting a disk for rotation on said stem.

2. The machine of the class described comprising a frame consisting of a flat base and two mating parallel heads, a main shaft having a fixed driving-wheel in the top of the frame, the reducing-train of gearing, the
40 frustum-shaped rolls driven thereby, the table hinged for oscillation vertically on a horizontal axis below the rolls, the stand adjustably mounted on the table, the stem fixed to and rising from the stand and inclined outwardly from the rolls a handle fixed to the
45 stand to extend horizontally outward for adjusting the table and stand vertically relative to the rolls and also for adjusting the stand horizontally relative to the table and the rolls
50 and means for mounting a disk on the stem, all arranged and combined to operate in the manner set forth for the purposes stated.

3. The combination of the reducing-train of gearing, the frustum-shaped rolls driven
55 thereby, the hinged table, the swivel-stand mounted adjustably for oscillation on the table, the stem on said stand and inclined relative thereto, means for mounting a disk for rotation or revolution on the stem and means
60 for oscillating the stand to carry the axis of the disk across the plane of the rolls.

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Witnesses:

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