

No. 721,191.

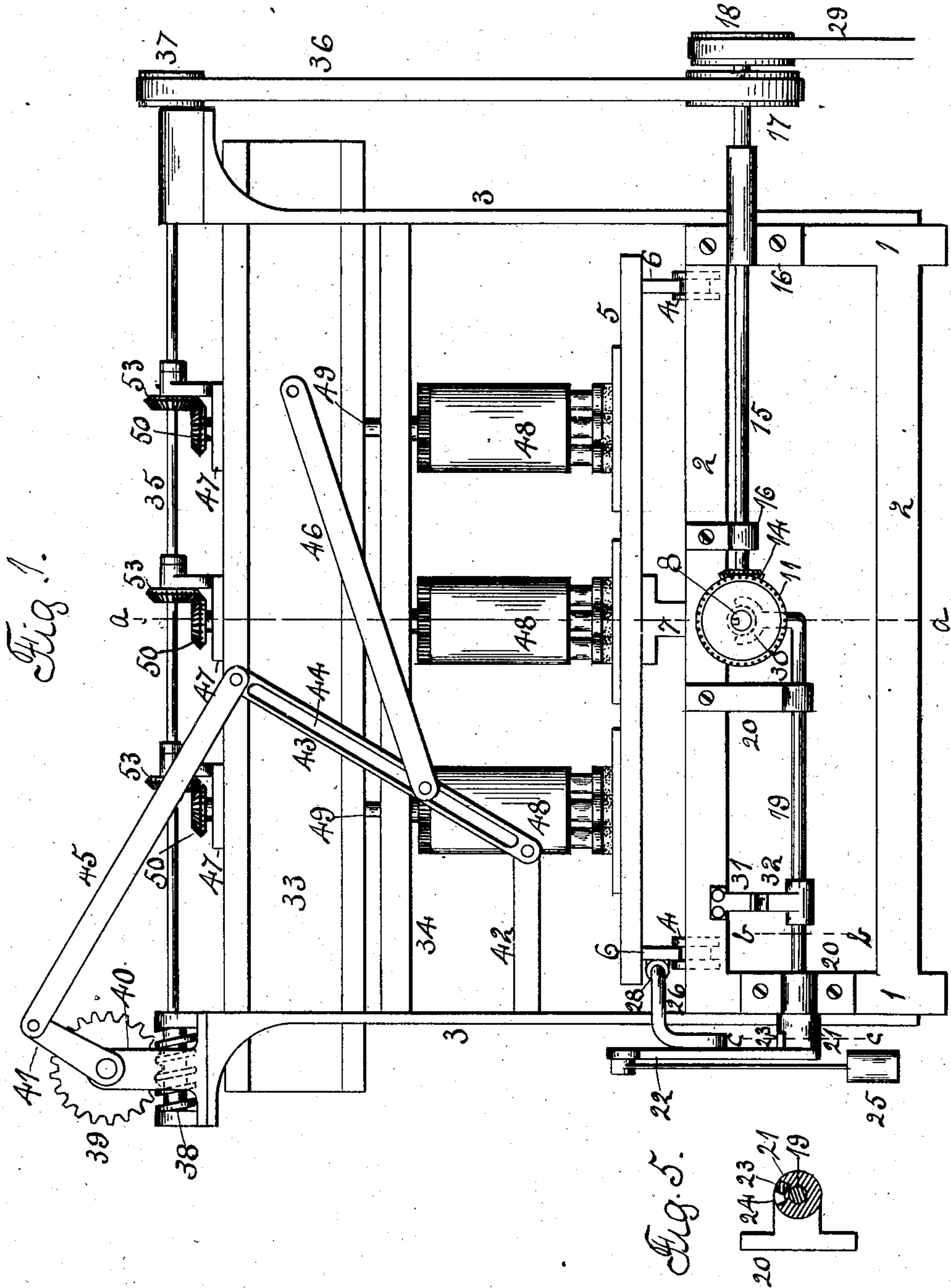
PATENTED FEB. 24, 1903.

E. J. HOFFMAN.
GLASS POLISHING MACHINE.

APPLICATION FILED APR. 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
C. B. Lelark
E. Bebel.

Inventor:
Edward J. Hoffman
By A. Bebel
att.

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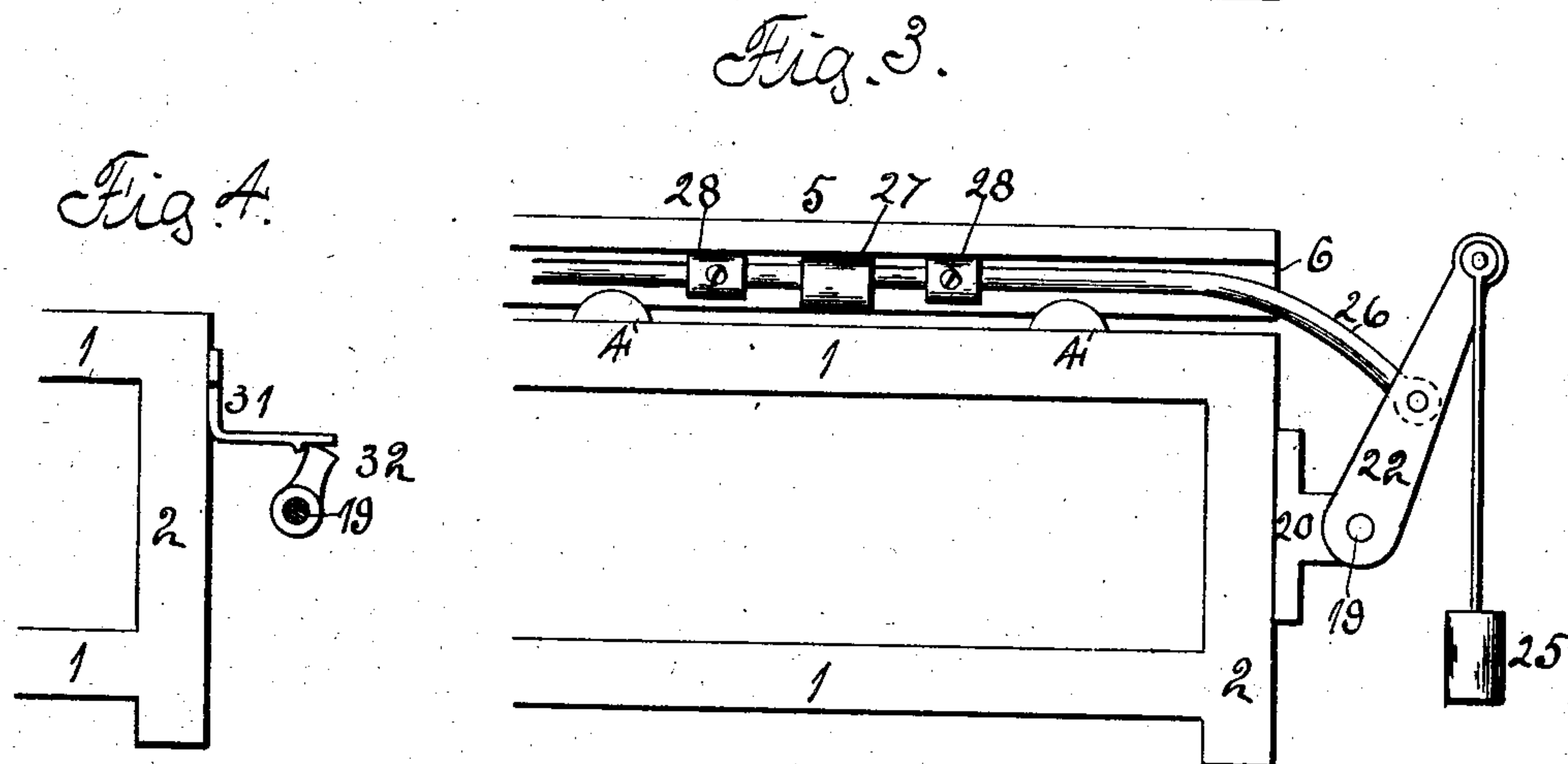
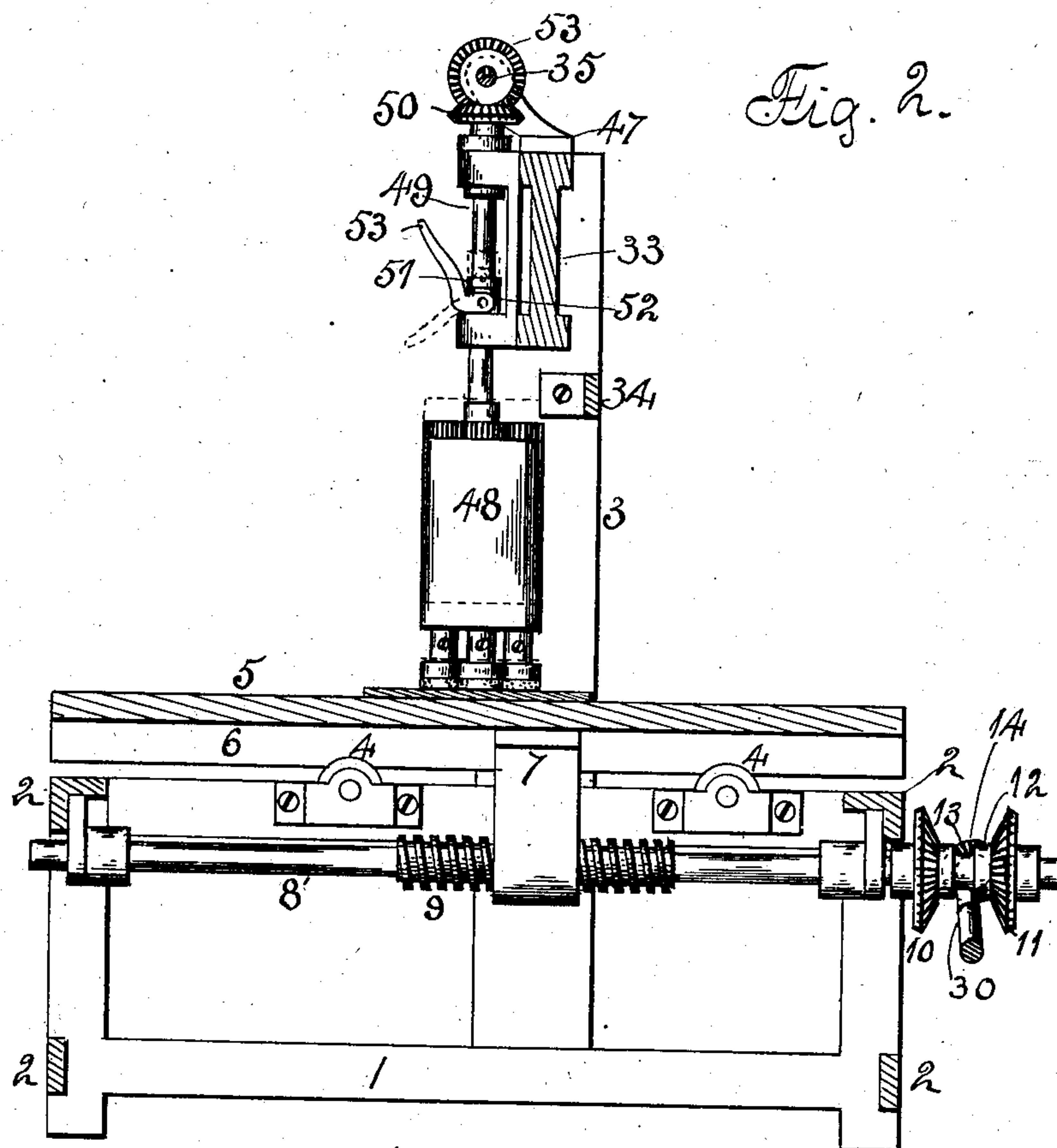
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2 SHEETS—SHEET 2.



Witnesses:
E. B. Clark
E. Behel

Inventor:
Edward J. Hoffman
By A. O. Rebel
Atty.

UNITED STATES PATENT OFFICE.

EDWARD J. HOFFMAN, OF ROCKFORD, ILLINOIS.

GLASS-POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 721,191, dated February 24, 1903.

Application filed April 9, 1902. Serial No. 102,136. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. HOFFMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Glass-Polishing Machines, of which the following is a specification.

This invention relates to improvements in machines for polishing glass; and it consists in a movable table and a head or series of heads having a bodily movement at right angles to the movement of the table and also a rotary movement.

In the accompanying drawings, Figure 1 is a front elevation of my improved glass-polishing machine. Fig. 2 is a vertical lengthwise section through the frame and table on dotted line *a*, Fig. 1. Fig. 3 is an end elevation of the lower portion of the machine. Fig. 4 is a vertical section on dotted line *b*, Fig. 1. Fig. 5 is a vertical section on dotted line *c*, Fig. 1.

The main frame consists of the side bars 1, end bars 2, and vertical supports 3. The side bars 1 support grooved rollers 4. A table 5 has rails 6 secured to its under face and are supported upon the grooved-faced rollers 4. To the under face of the table is secured a bracket 7, having its free end internally screw-threaded. A shaft 8 is supported by the end bars 2 of the main frame and has a screw-threaded section 9 engaging the brackets 7. Two beveled gears 10 and 11 are connected together by a sleeve 12, having a peripheral groove 13. These gears have a feather connection with the shaft 8, so that they can be moved in the lengthwise direction of the shaft and at the same time revolve the shaft.

A beveled pinion 14 has a connection with the shaft 15, and the shaft is supported in bearings 16. Two pulleys 17 and 18 are supported by the shaft. The pinion 14 is in a position to be engaged by either of the beveled gears 10 and 11.

A shipping-rod 19 is supported in bearings 20 and has a section 21 of a clutch connected therewith. An arm 22 is loosely mounted on the rod 19 and has a projection 23 entering the notch 24 of the clutch-section 21.

A weight 25 is pivotally supported by the free end of the arm 22.

A rod 26 has a pivotal connection with the arm 22 and extends in the lengthwise direction of the table and guided in an eye 27, secured to one end of the rails 6. Two collars 28 have an adjustable connection with the rod 26, one located each side of the eye 27. A belt 29 drives the pulley 18, shaft 15, and beveled pinion 14. One of the beveled gears 10 and 11 is always in engagement with the pinion, except at the instant of transferring from one to the other, and a rotary movement will be imparted to the shaft 8, and the screw 9 will move the table in the lengthwise direction of the shaft 8.

As the table moves the eye 27 will engage one of the collars 28 and move the rod 26 and the arm 22 until the weight 25 passes the dead-center, when the weight will fall and carry the arm 22 with it, and the projection 23 will engage one edge of the notch 24 and move the rod 19. The free end of this rod 19 has a fork 30 located in the peripheral groove 13 between the beveled gears 10 and 11, and its rocking movement will move one of the gears out of engagement with the pinion 14 and the other into engagement, which will reverse the movement of the table, when the parts will be again operated.

To the end frame 2 is secured a bar 31, which engages an arm 32, connected to the rod 19, and serves to hold the beveled gears in mesh with the pinion.

To the frame of the machine are secured two uprights 3, which support a beam 33 in a manner to permit it to slide endwise. A brace-bar 34 serves to support the upper ends of the uprights.

A shaft 35 is supported in brackets secured to the upper ends of the uprights and is rotated by a belt 36, connecting the pulley 37 with the pulley 17. A worm 38 is supported by the shaft 35 and is located at one end thereof and meshes with a worm-wheel 39, supported in a bracket 40. A crank 41 has a connection with the worm-wheel and revolves therewith. A bracket 42 extends from one of the uprights, and to its free end is pivoted a lever 43, having a lengthwise slot 44. A link 45 connects the crank and upper end of the lever 43. A link 46 has a pivotal connection with the beam 33, and its other end has a connection with the lever 43 and in

a manner to permit it to be adjusted in the lengthwise direction of the lever.

As the shaft rotates the crank 41 will be rotated, which will oscillate the lever 43, and the lever through the link 46 will impart a reciprocating movement to the beam 33. To the face of the beam are secured brackets 47, supporting heads 48, in this instance three in number. The main shaft 49 of each head engages a miter toothed wheel 50, and the miter-wheel is held against vertical movement, but has a feather connection with the shaft 49, so that the head can be raised vertically and at the same time revolved by the miter-wheel. The construction of head is the same as shown in my Patent No. 571,564, dated November 17, 1896, and consists of a series of pads rotating around the shaft 49 and each having an additional rotary movement, and as such I lay no claim in this application.

To the shaft 49 is secured a collar 51, and around the shaft below the collar is located a block 52, to which is pivoted a lever 53. By means of this lever the head can be raised and held elevated, as shown in dotted lines, Fig. 2. Upon the shaft 35 are located three

miter toothed wheels 53, having a sliding engagement therewith by a feather connection. The brackets 47, secured to the upper edge of the beam 33, support the miter gear-wheels 53 and hold them in a fixed relation with the beam.

The rotation of the shaft 35 will rotate the vertical shafts 49 through their gear connection, and as the beam is reciprocated the heads will be carried bodily with it, and with the movement of the table the surface of the glass will be traversed by the pads in various directions, imparting to it the highest polish.

I claim as my invention—

In a glass-polishing machine, the combination of a beam supporting a rotating head, the beam guided to allow of its reciprocation, a rotating crank, an arm pivoted at one end to a stationary support, a link connecting the free end of the arm and the crank and a bar having a pivotal connection with the beam, and an adjustable connection with the link.

EDWARD J. HOFFMAN.

Witnesses:

A. O. BEHEL,
E. BEHEL.