

No. 724,567.

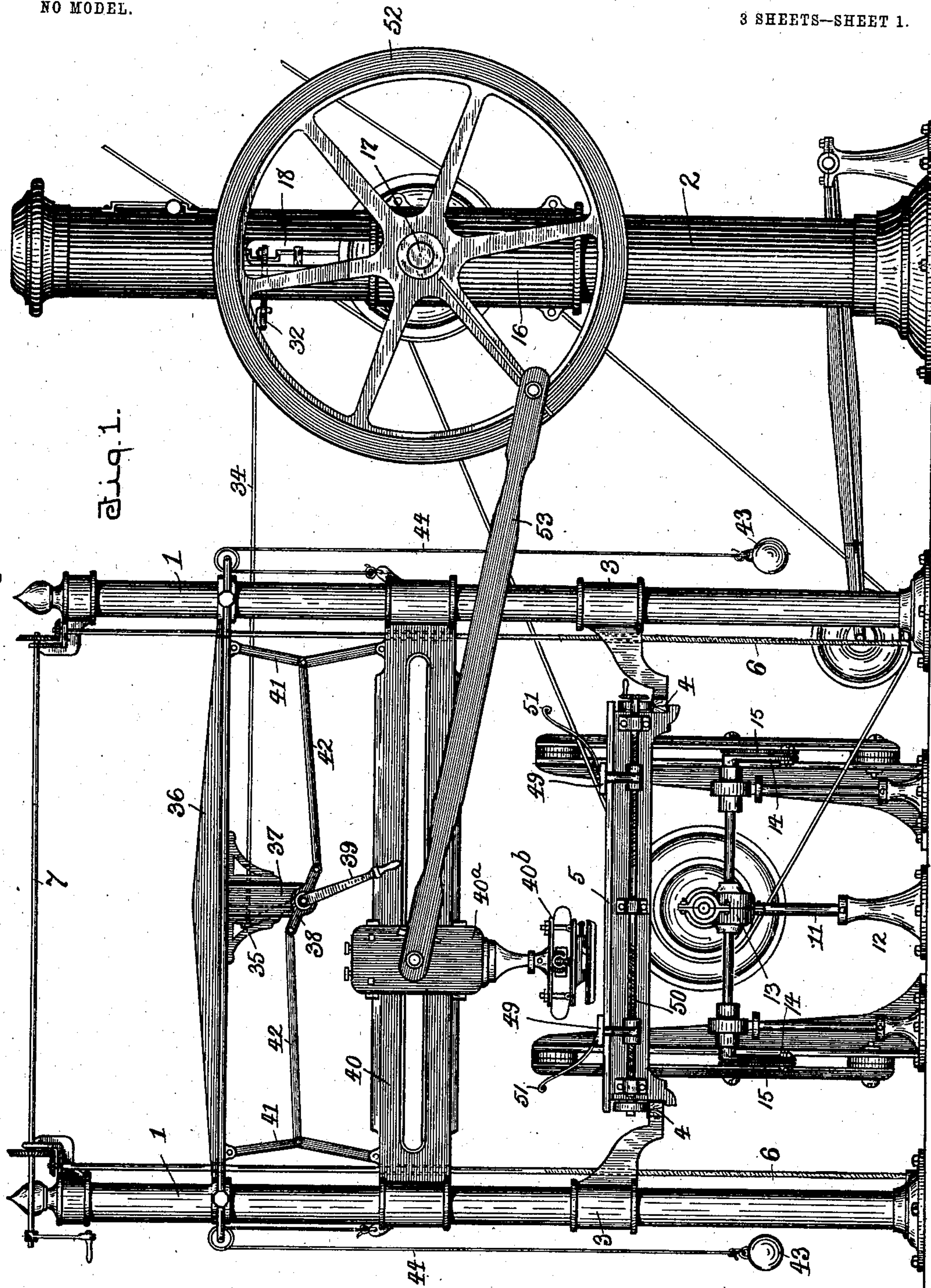
PATENTED APR. 7, 1903.

M. S. GOOLEY.
RUBBING OR POLISHING MACHINE.

APPLICATION FILED OCT. 2, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



George Oltsch }
Maggie Oltsch } Witnesses.

Michael S. Gooley
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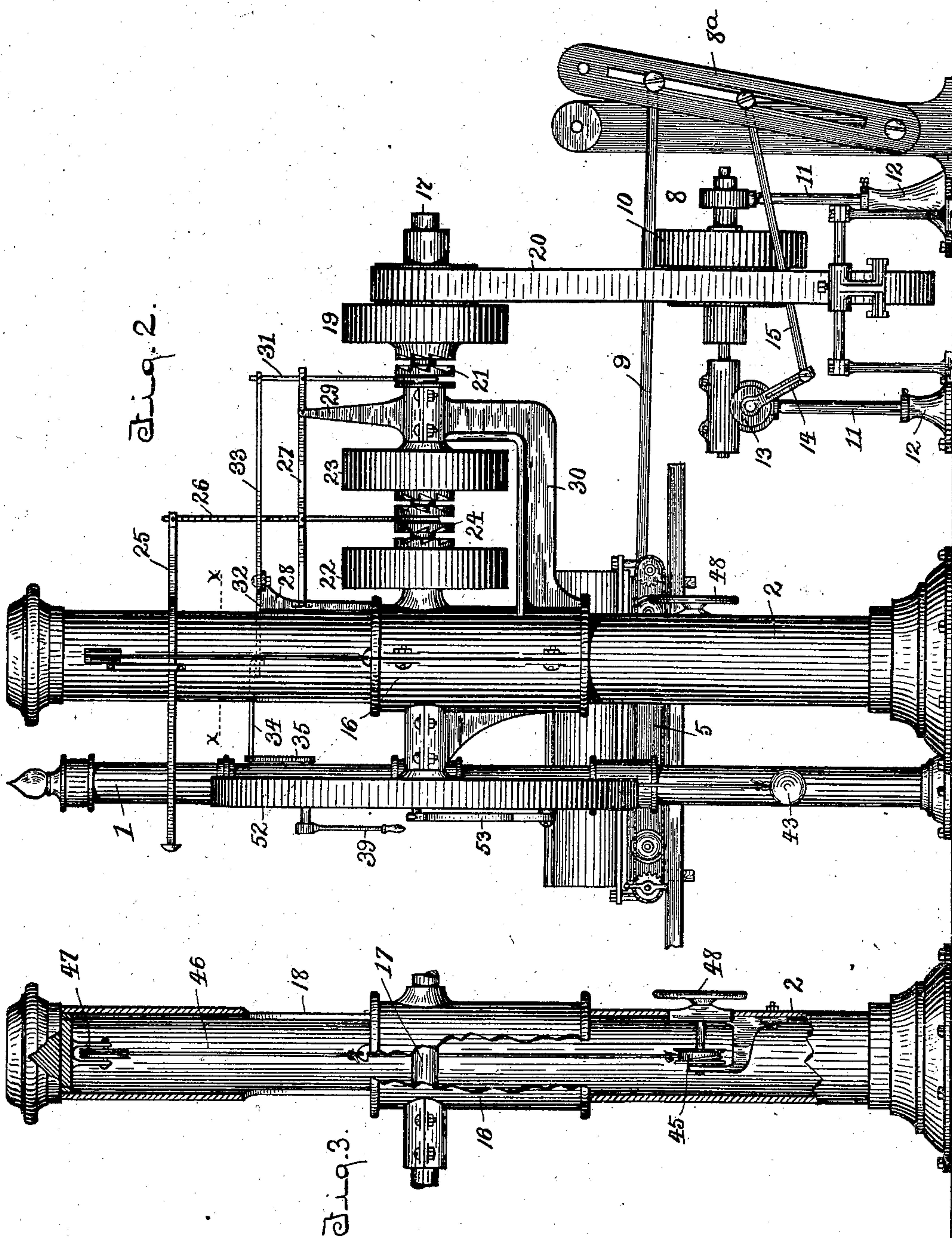
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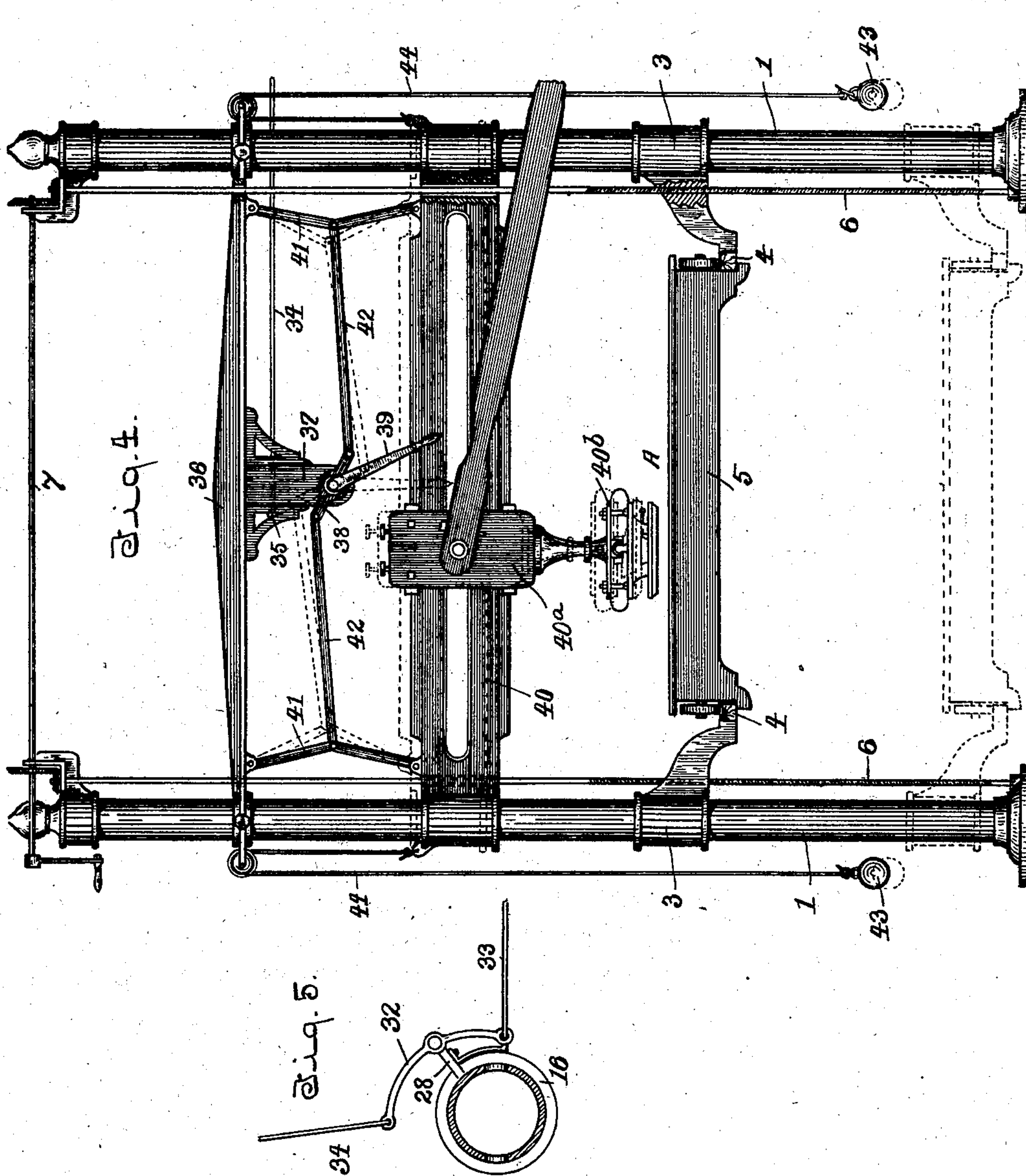
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3 SHEETS—SHEET 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

MICHAEL S. GOOLEY, OF SOUTH BEND, INDIANA.

RUBBING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 724,567, dated April 7, 1903.

Application filed October 2, 1902. Serial No. 125,693. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL S. GOOLEY, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Rubbing or Polishing Machines; and I do hereby 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.

My invention relates to rubbing or polishing machines for polishing furniture, stone, or any article of manufacture; and the object is to provide a machine of simple construction wherein the several elements cooperate to produce a device which is efficient in operation and easy of manipulation.

The invention consists of a vertically-adjustable and horizontally-reciprocable carriage carrying the article to be polished, a polisher reciprocable at right angles to the movement of the carriage, and means to start or stop the carriage-shifting mechanism synchronously with the elevation or depression of the polisher.

The invention further consists in the construction, combination, and arrangement of parts, all as will be more fully described hereinafter and illustrated in the accompanying drawings, forming a part of this application, and finally pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the machine complete. Fig. 2 is an end elevation of the same. Fig. 3 is a view, partly in elevation and partly in section, of the standard, showing the manner of adjusting the sleeve which carries the driving and transmitting pulleys. Fig. 4 is a side elevation of a portion of the machine, showing the polisher and the mechanism for raising and lowering the same in their two positions, the dotted lines illustrating the position of the parts when the polisher is raised. Fig. 5 is a transverse section of the standard on the line $x-x$ of Fig. 2.

Referring to the drawings in detail, in which like characters of reference indicate corresponding parts throughout the several views, 11 designate the uprights on which the carriage, its adjusting mechanism, the

polisher, and its raising and lowering mechanism are mounted, and 2 designates the standard on which the driving mechanism for the several parts is mounted. On the uprights are slidably mounted a pair of brackets 3, having a suitable track 4, on which the carriage 5 is adapted to reciprocate, the carriage being provided with suitable rollers for the purpose. Extending parallel with the uprights 1 and mounted in suitable bearings at the top and bottom thereof are a pair of adjusting-rods 6, the screw-threaded portions of which are adapted to engage threaded apertures in the brackets 3 for the purpose of vertically adjusting the carriage on which the article to be polished is supported, the said rods being operated through the medium of a horizontal rod 7, journaled in the top of the uprights and having beveled gear connections with the rods 6, as shown.

The vertically-adjustable carriage is adapted to be reciprocated horizontally on the tracks 4 by a mechanism 8, for which I have applied for a patent in a contemporaneous application, said application bearing Serial No. 125,692, filed October 2, 1902. For the purpose of clearness and to enable others to understand the operation of the polishing-machine this improved carriage-shifting mechanism, briefly, consists of an oscillatory lever 8^a, pivoted at either end to a fixed support, and a rod 9, connecting the carriage and the lever. The shaft of the driving-pulley 10 is mounted in suitable uprights 11, which are vertically adjustable in the standards 12, and one end of the shaft of the pulley is connected with a suitable worm-gearing 13, having an arm 14 on the shaft of the worm-wheel, which is connected to the lever 8^a by an arm 15.

On the standard 2 is slidably mounted a sleeve 16, in which the shaft 17 is journaled and on which are mounted the power-pulley, the transmitting-pulley, and the driving pulley for the polisher.

The pulley 19 is loosely mounted on the shaft 17 and serves to drive the pulley 10 of the carriage-shifting mechanism, through the medium of a belt 20, when the clutch 21, which is keyed to the shaft 17, is thrown into engagement therewith.

22 and 23 designate fast and slow pulleys,

either of which may be caused to rotate with the shaft by means of the clutch 24 and permitting the operator to use either fast or slow speed, as desired. The clutch is operated by
 5 a push-bar 25, which connects with a lever 26, fulcrumed in a slot in the arm 27, which is supported at one end by an extension 28 of the sleeve 16 and at the other end by an upright 29 of a bracket 30. The lever 31 for
 10 operating the clutch 21 is similarly fulcrumed in the arm 27 and is connected with a bell-crank lever 32 by means of a rod 33, the said bell-crank lever being pivoted to the extension 28 of the sleeve, as shown in Fig. 5. The
 15 other end of the bell-crank lever is in engagement with a rod 34, which connects with a crank-arm 35, journaled in the frame of the polisher and which operates with the mechanism for raising and lowering the polisher.
 20 This raising and lowering mechanism for the polisher consists of a cross-head 36, having a depending portion 37, in which the shaft of the crank-arm 35 is journaled. On this shaft are mounted a two-arm lever 38 and a handle
 25 39, said lever being keyed thereto to adapt it to rotate therewith. The slotted beam 40, on which the head 40^a of the polisher 40^b reciprocates, is supported from the cross-head 36 by means of links 41, which form toggle con-
 30 nections with a pair of arms 42, said arms being also connected to the arms of the lever 38, so that when the handle 39 is pushed to the position indicated by dotted lines in Fig. 4 the arms 42 and links 41 will be drawn
 35 inside and the beam 40 elevated, while a connecting-rod 34, which is secured to the crank-arm 35, will at the same time be pushed and through the medium of the bell-crank lever, rod 33, lever 31, and clutch 21 throw the driv-
 40 ing-pulley 19 into or out of connection with the shaft, and thereby start or stop the carriage-shifting mechanism synchronously with the raising or lowering of the polisher. When the beam 40 is raised to the position indicated
 45 by dotted lines in Fig. 4, the counterweights 43, which are connected with the beam by means of a connection 44, will hold it in such elevated position.

The cross-head 36 and the beam 40 are ver-
 50 tically adjustable on the uprights 1 to adapt the polisher to be brought to any position coincident with the position of the carriage; but to insure the proper operativeness of the machine when so adjusted the sleeve 16, carrying
 55 the driving mechanism for the several parts, is vertically adjustable on the standard 2. This adjustment is accomplished by means of a windlass 45, journaled in a suitable bracket in the base of the standard and having a
 60 flexible connection 46, which passes up over a pulley 47 at the top of the standard, the other end being connected to the sleeve 16.

It will be seen that by turning the hand-
 65 wheel 48 the flexible connection 46 will be wound on the windlass 45, and the sleeve, with the shaft which passes through a slot in the standard, together with the transmitting-

pulleys and driving-pulley, will be raised or lowered to correspond to the elevation of the polisher and its frame.

The article to be rubbed or polished is clamped between the jaws 49, which are movable relatively back and forth on a screw-rod 50, and from the top of these jaws 49 extend shields 51, which catch the splash of oil
 75 or other materials used in polishing.

The operation may be stated, briefly, as follows: The article to be rubbed or polished is clamped between the jaws 49 on the carriage and the carriage adjusted vertically to the
 80 desired position. The handle 39 is then pushed until the arms 42 and links 41 assume the position shown in full lines in Fig. 4 and the polisher depressed into engagement with the article. This operation, as previously
 85 explained, throws the clutch 21 into engagement with the gear 19 and through the medium of the belt 20 and the mechanism 8, which has previously been adjusted, as is more fully explained in the contemporaneous application,
 90 shifts the carriage back and forth upon its guides or tracks 4. The clutch 24 is then thrown into engagement with one of the driving-pulleys 22 23 and the fly-wheel 52 is caused to rotate and through the medium of the pit-
 95 man 53 reciprocates the polisher at right angles to the reciprocations of the carriage, thus bringing all parts of the article to be polished within range of the polisher.

Having thus described my invention, what
 100 I claim is—

1. In a polishing or rubbing machine, the uprights, a vertically-adjustable support for the article to be polished mounted on the up-
 105 rights, a frame on the uprights, a polisher carried by the frame, said frame also carrying a means for throwing the polisher into and out of engagement with the article to be polished, and means for driving the polisher.

2. In a polishing or rubbing machine, a re-
 110 ciprocating polisher, means to raise and lower the polisher, a reciprocating carriage, means to operate the carriage, and mechanism to start or stop the carriage-operating means synchronously with the raising and lowering
 115 of the polisher.

3. In a polishing or rubbing machine, a re-
 120 ciprocating polisher, a carriage reciprocal at right angles to the movement of the polisher, means to reciprocate the carriage, means to raise and lower the polisher and means co-operating with the polisher raising and lowering means to start or stop the carriage-re-
 125 ciprocating means.

4. In a polishing or rubbing machine, the
 125 combination with a vertically-adjustable, reciprocal carriage and means to operate said carriage, of a vertically-adjustable polisher reciprocal at right angles to the movement of the carriage, means to raise and lower the
 130 polisher to bring it into or out of operative position with the article carried by the carriage, said raising and lowering means co-operating with the carriage-operating means

to start or stop the carriage synchronously with the engagement or disengagement of the polisher with the article.

5 In a polishing or rubbing machine, the combination with a vertically-adjustable, reciprocal carriage and means to operate said carriage, of a vertically-adjustable, reciprocal polisher adapted to move at right angles to the movement of the carriage, means to 10 drive said polisher at different speeds, and means to vertically adjust the driving means to bring it into operative position with the polisher.

15 6. A polishing or rubbing machine comprising uprights, a reciprocal carriage vertically adjustable thereon, a cross-head vertically adjustable on the uprights, a beam suspended from said cross-head, a polisher reciprocal on said beam, mechanism carried by

the cross-head to raise and lower the beam 20 and polisher, counterweights connected to the beam to hold it in raised position, a standard having a sleeve vertically adjustable thereon, a shaft journaled in said sleeve, power-transmitting pulleys mounted on the shaft, a driv- 25 ing-wheel for the polisher mounted on the shaft, a clutch to engage or disengage the power-pulley for the carriage-shifting mechanism and a connection between said clutch and the raising and lowering mechanism for 30 the beam and polisher.

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

MICHAEL S. GOOLEY.

Witnesses:

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MAGGIE OLTSCH.