

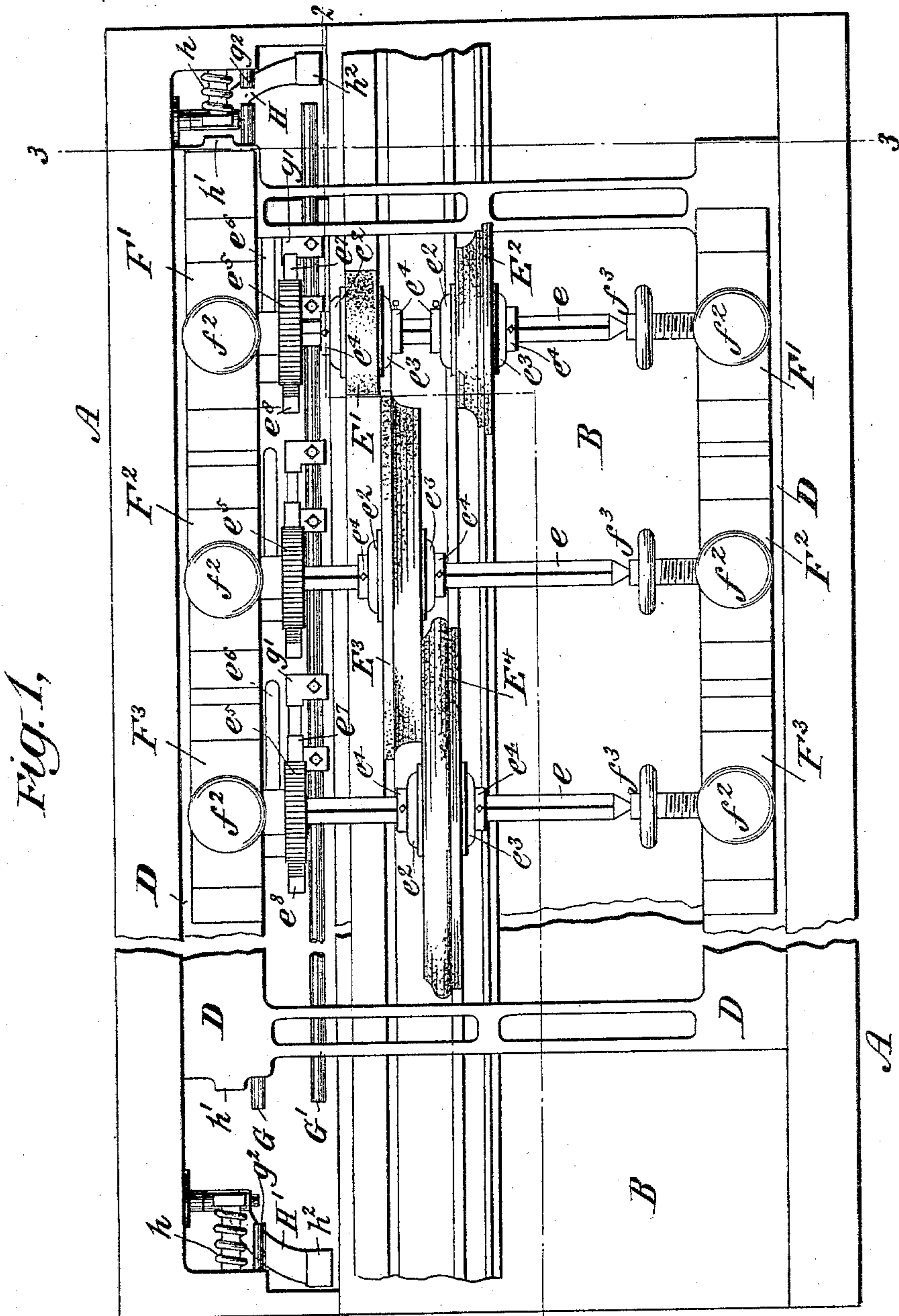
(No Model.)

3 Sheets—Sheet 1.

E. P. LORCH.  
POLISHING MACHINE.

No. 597,542.

Patented Jan. 18, 1898.



WITNESSES:

*N. H. Kaybrook*  
*Ernest H. Pinson*

INVENTOR

*Ernest P. Lorch*

BY

*Edwin H. Brown*  
his ATTORNEY

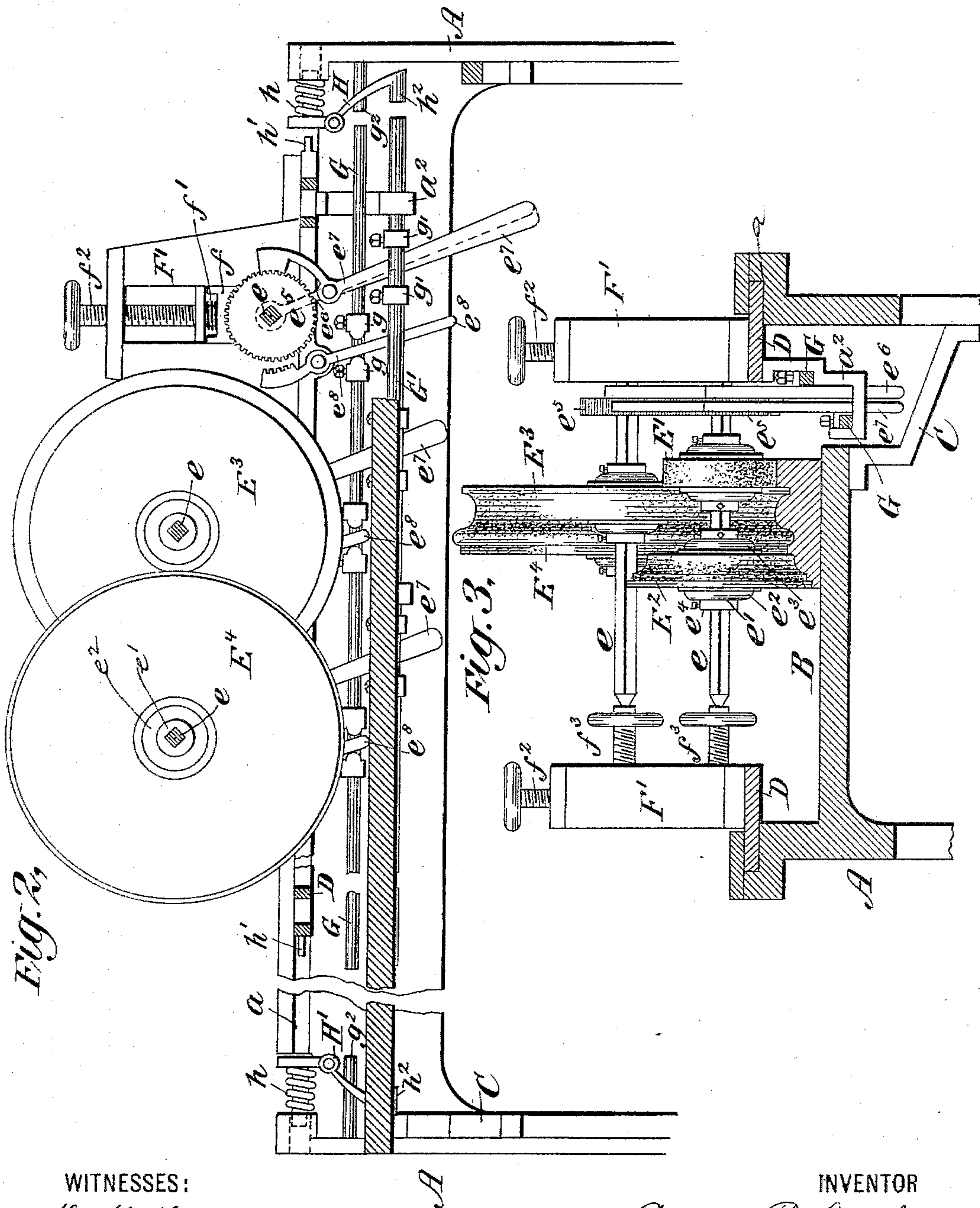
(No Model.)

3 Sheets—Sheet 2.

E. P. LORCH.  
POLISHING MACHINE.

No. 597,542.

Patented Jan. 18, 1898.



WITNESSES:

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(No Model.)

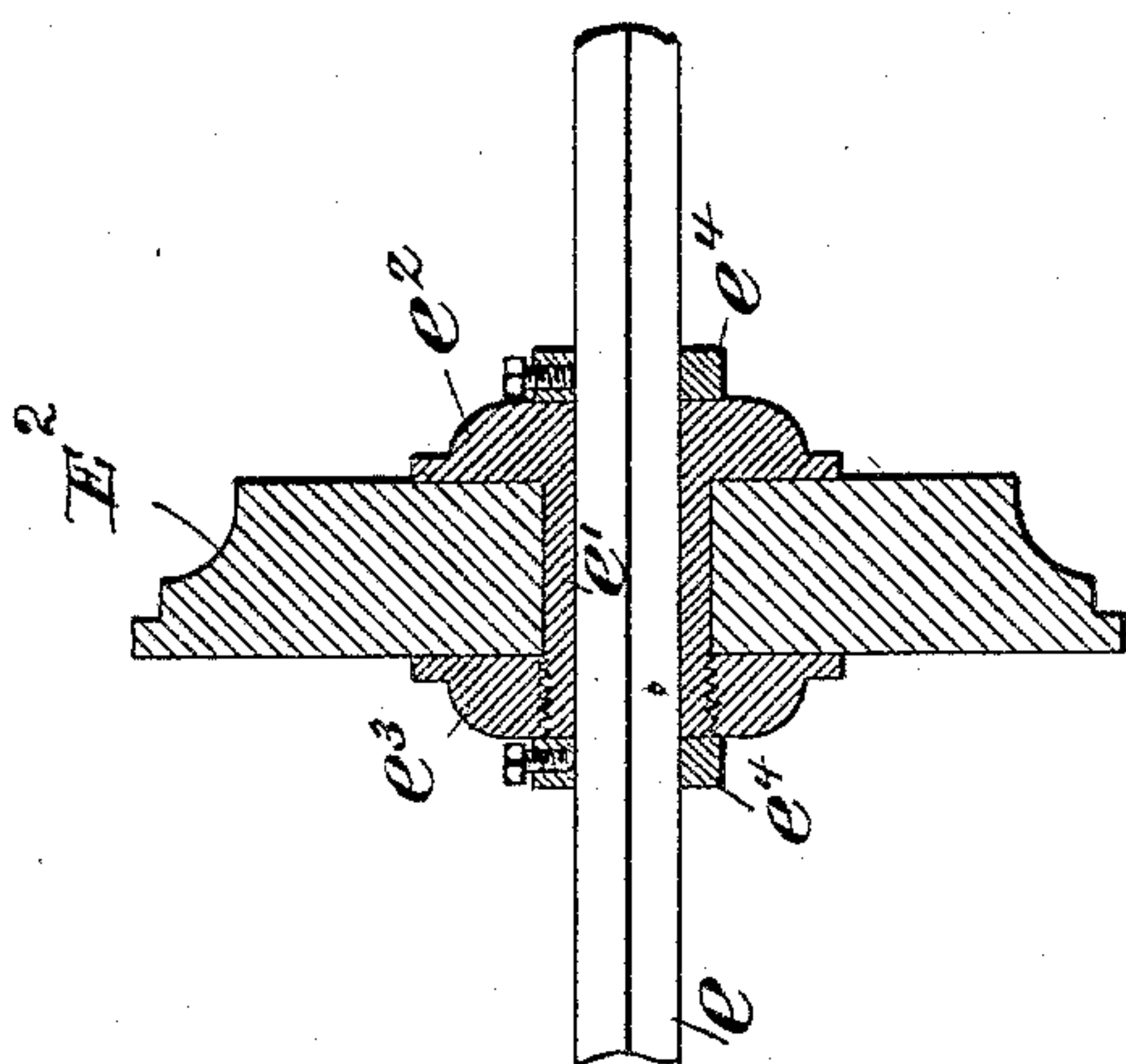
3 Sheets—Sheet 3.

E. P. LORCH.  
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Fig. 4,



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ERNEST P. LORCH, OF NEW YORK, N. Y.

## POLISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 597,542, dated January 18, 1898.

Application filed January 27, 1897. Serial No. 620,862. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST P. LORCH, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Polishing-Machines, of which the following is a specification.

The present invention relates to polishing-machines, and especially to polishing-machines which are designed to polish an irregular surface, such as a molding.

In polishing a molding or similar uneven surface of wood there is great liability of the polishing-surfaces becoming unduly heated by friction, so that the wood may be scorched. To prevent this is the object of my invention, and this I effect by using polishing-disks which reciprocate over the surface operated upon and are operated to present a new operating-surface at predetermined periods, as at the end of each reciprocation.

I will describe a machine embodying the features of my invention and afterward point out in the claims the features of novelty.

My machine comprises a series of disks composed of sand-board sheets made to be used edgewise, and such as are shown in application Serial No. 586,885, filed by me April 8, 1896, and means for reciprocating these disks over the surface to be polished.

In the drawings I have illustrated a machine embodying my invention, in which—

Figure 1 is a plan view. Fig. 2 is a longitudinal section along line 2 2 of Fig. 1. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a vertical longitudinal section of one of the polishing-disks, showing means of mounting same on its shaft.

Referring to the drawings, A is the main frame of the machine, and B is a bed-plate upon which rests the molding to be polished, one side of said bed-plate being supported by a bracket C.

D represents a reciprocating frame working in ways *a*.

*E*<sup>1</sup>, *E*<sup>2</sup>, *E*<sup>3</sup>, and *E*<sup>4</sup> are sand-board disks whose peripheries are shaped to conform to a section of the surface to be polished. In the machine illustrated I have shown these disks as mounted in pairs on shafts *e*. The disks may be mounted upon the shafts *e* in any desired manner.

In the drawings I have shown the disks as having a central perforation, through which passes a sleeve *e'*, provided at one end with a flange *e*<sup>2</sup> and at the other end with a threaded portion, upon which is screwed a flange *e*<sup>3</sup>. The perforation through the sleeve *e'* is shown as being square, adapting it to fit the shafts *e*, upon which shafts they are secured by collars *e*<sup>4</sup>, keyed thereon. Three pairs of pedestals *F*<sup>1</sup>, *F*<sup>2</sup>, and *F*<sup>3</sup> are mounted on the reciprocating frame D, so as to have motion with it. These pedestals are provided with bearing-blocks *f*, springs *f'*, and screws *f*<sup>2</sup>. The ends of the shafts *e* at one side of the machine are journaled in the bearing-blocks *f* and on the other side of the machine are secured by tail-stocks *f*<sup>3</sup>, which are journaled in the bearing-blocks *f*. By means of the springs *f'* and the screws *f*<sup>2</sup> the adjustment of the sand-board disks is secured to and away from the surface to be operated upon.

Any desired means may be availed of for giving the reciprocal movement to the frame D, these means not being shown in the drawings nor described, as it is immaterial to the present invention what means are used.

For the purpose of giving intermittent rotation to the disks I mount on each of the shafts *e* a ratchet-wheel *e*<sup>5</sup> and provide means for independently rotating these ratchet-wheels by pawls engaging therewith, which pawls are actuated by the reciprocation of the frame D; but of course I do not limit myself to the precise construction shown for giving intermittent rotation to the polishing-disks. In the drawings I have shown one of these shafts as provided with a ratchet-wheel *e*<sup>5</sup>, keyed thereto. Loosely mounted on the shaft is an arm *e*<sup>6</sup>, to which is pivoted a pawl-lever *e*<sup>7</sup>. Another pawl-lever *e*<sup>8</sup> is shown as pivoted on the reciprocating frame. Depending from the reciprocating frame D are a number of brackets *a*<sup>2</sup>, which support the shifting-rods *G* and *G'*. The shifting-rod *G* is provided with adjustable projections or lugs *g*, between which passes the arm of the pawl-lever *e*<sup>8</sup>. The shifting-rod *G'* is provided with similar lugs or projections *g'*, between which pass the arm *e*<sup>6</sup> and the arm of the pawl-lever *e*<sup>7</sup>.

Mounted on the frame of the machine at one end is a double-crank lever H, one arm of which is normally held to position by a



spring  $h$ , receiving the impact of a projection  $h'$  on the reciprocating frame D, the other arm of said lever H being provided with a head  $h^2$ , which strikes the shifting-rod G' when the lever H is operated by the projection  $h'$  striking against it. On the other end of the machine is mounted a similar crank-lever H', one of whose arms is normally held to position by a spring  $h$ , the other arm being provided with a head  $h^2$ , similar to the head  $h^2$  of the lever H. Stops  $g^2$  receive the impact of the shifting-rod G and alternately throw the pawl-lever  $e^8$  into and out of engagement with the ratchet-wheel  $e^5$ .

When the projection  $h'$  strikes the arm of lever H, it presses the arm against the spring, causing the head  $h^2$  to strike against the shifting-rod G', thus tilting out of engagement the pawl-lever  $e^7$ . At the same time the shifting-rod G strikes the stop  $g^2$ , causing the pawl-lever  $e^8$  to be moved into engagement with the ratchet-wheel  $e^5$ . When the reciprocating frame D reaches the limit of its movement in the opposite direction, the projection  $h'$  strikes against the arm of lever H', causing the head  $h^2$  thereof to strike against the end of shifting-rod G', which operates to move over the pawl-lever into engagement with the ratchet-wheel  $e^5$  and partially rotate the same, this rotation being possible by reason of the fact that the shifting-rod G strikes against the stop  $g^2$  and throws the pawl-lever  $e^8$  out of engagement with the ratchet-wheel  $e^5$ .

What is claimed as new is—

1. In a polishing-machine, a reciprocating frame, a shaft adjustably journaled on the reciprocating frame, a polishing-disk mounted on said shaft, and means for giving intermittent rotation to the polishing-disk, substantially as specified.

2. In a polishing-machine, the combination of a reciprocating frame, a shaft mounted thereon, a polishing-disk composed of abrad-

ing material mounted on said shaft, and means for giving intermittent rotation to the polishing-disk, consisting of a ratchet-wheel mounted on said shaft, a pawl-lever secured to an arm loosely journaled on said shaft, and means for oscillating said arm, substantially as specified.

3. In a polishing-machine, the combination of a reciprocating frame, a shaft adjustably mounted thereon, a polishing-disk mounted on said shaft, and means for giving intermittent rotation to the polishing-disk, consisting of a ratchet-wheel mounted on said shaft, a pawl-lever secured to an arm loosely journaled on said shaft, and means for oscillating said arm, substantially as specified.

4. In a polishing-machine, the combination of a reciprocating frame, a shaft journaled thereon, a polishing-disk, mounted on said shaft, a ratchet-wheel mounted on said shaft, a pawl-lever engaging with said ratchet-wheel, a double-crank lever operated by the reciprocating frame, and a shifting-rod engaging the pawl-lever and actuated by one of the arms of the double-crank lever, substantially as specified.

5. In a polishing-machine, the combination of a reciprocating frame, a shaft mounted thereon, a polishing-disk composed of abrading material and a ratchet-wheel mounted on said shaft, a pawl-lever engaging the ratchet-wheel, means for operating said pawl-lever to cause a partial rotation thereof, and means for securing the shaft against rotation during the movement of the reciprocating frame, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST P. LORCH.

Witnesses:

ERNEST HOPKINSON,  
W. LAIRD GOLDSBOROUGH.