

D. Shive,

Polishing Daguerreotype Plates.

N^o 12,560.

Patented Mar. 20, 1855.

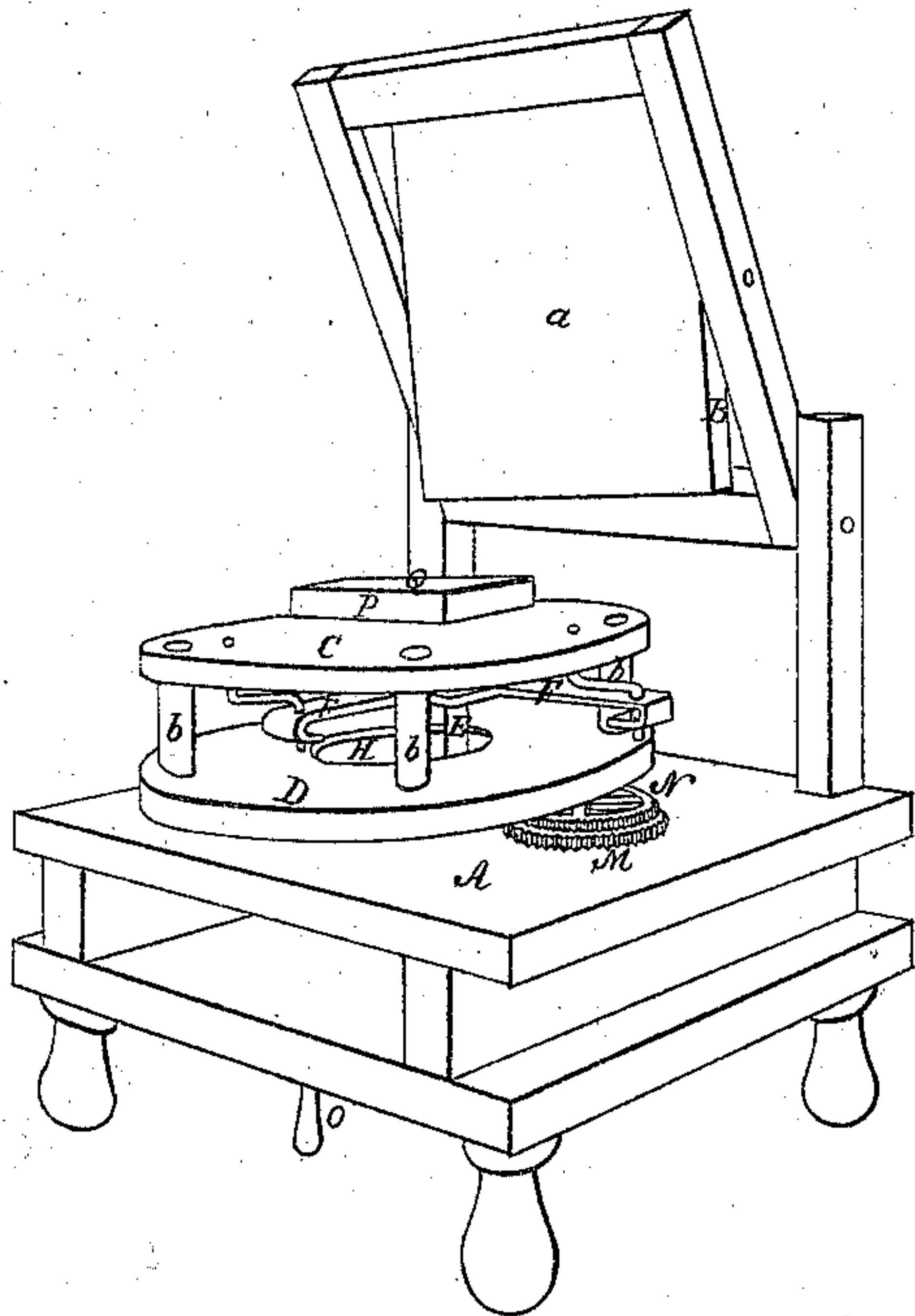


Fig. 1.

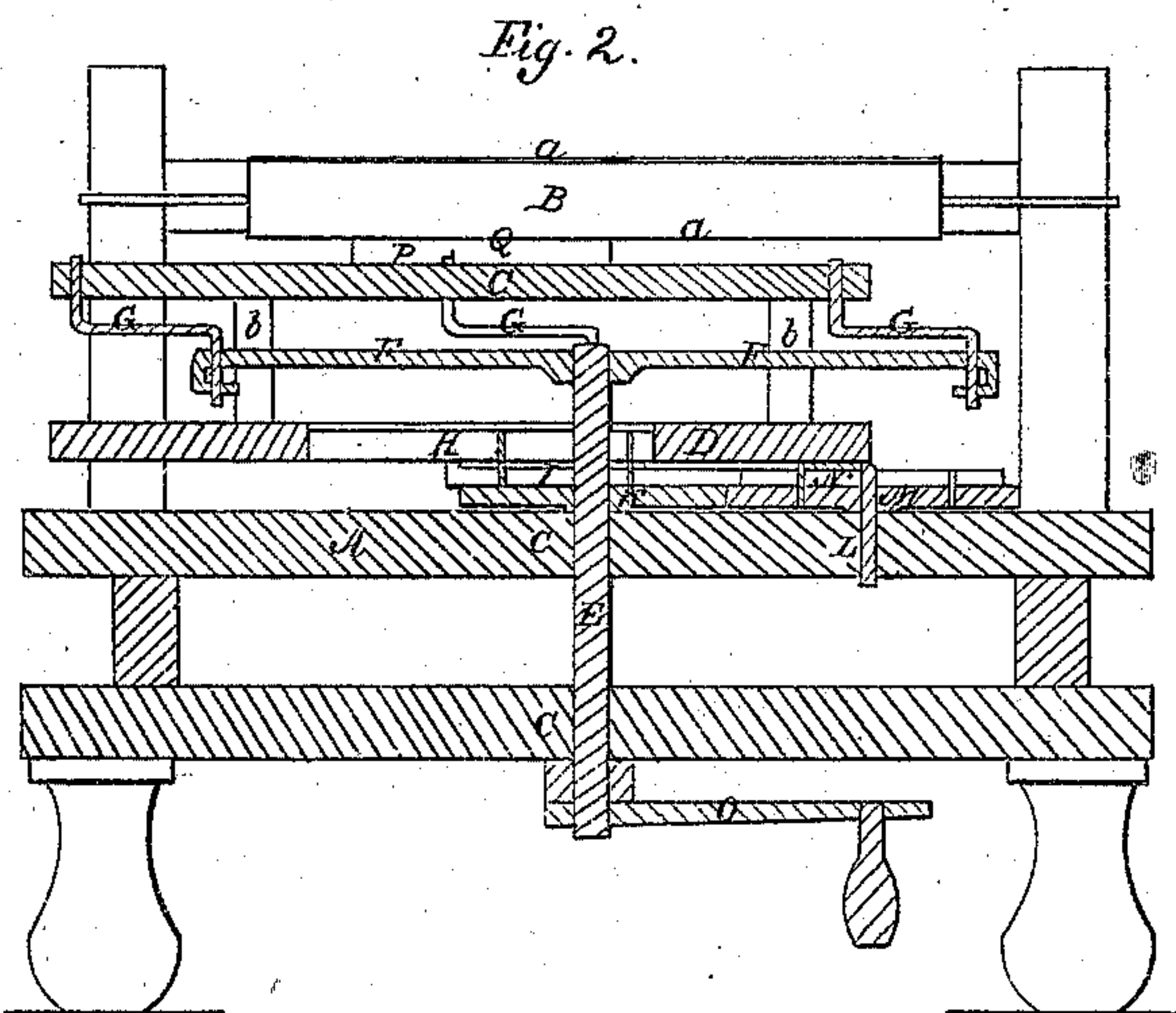


Fig. 2.

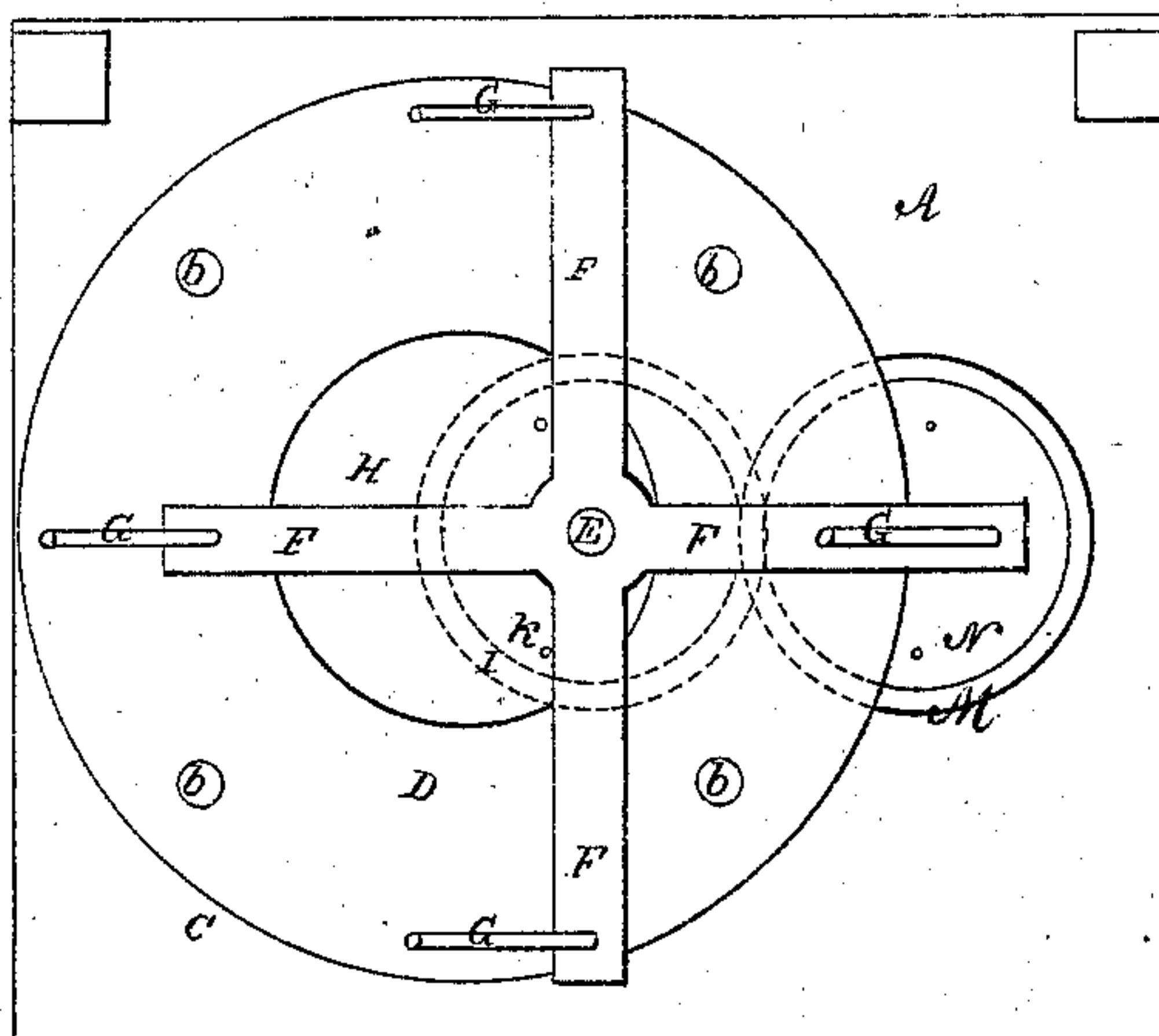


Fig. 3.

Witnesses
Ben. Monson
Jonathan H. Waters

Inventor
David Shive

UNITED STATES PATENT OFFICE.

DAVID SHIVE, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR POLISHING DAGUERREOTYPE-PLATES.

Specification forming part of Letters Patent No. 12,560, dated March 20, 1855.

To all whom it may concern:

Be it known that I, DAVID SHIVE, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Machine for Polishing Daguerreotype-Plates and other Like Surfaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a vertical section of the same through the central shaft, and Fig. 3 a plan view having the pad and upper circular piece removed.

Like letters indicate the same parts when on the several figures.

The nature of my invention consists in providing a machine for polishing daguerreotype-plates and other like surfaces requiring the finest polish, adapted to cause either the plate or the polishing-pad to move in constantly-changing circles, the one piece against the other, or, in other words, the one to gyrate or whirl around against the other, so as to continually change by circular motions the relative position of every point of contact between the two surfaces.

In preparing daguerreotype-plates for receiving the picture the more perfect the polish the more perfect will be the heliographic effect, and experience has fully demonstrated that in procuring the polish required on the surface of the plate there is no motion that can be given to the pad comparable in its effects to a gyrating one; but this motion has heretofore required to be effected by hand, and is consequently dependent upon the skill or manual dexterity of the operator, and is always attended with the expenditure of much time and labor. To obviate these objections, and at the same time enable the most inexperienced operator to produce the most perfect polish upon the surface of such plates, is the object effected by the use of my invention.

Referring to the drawings, A is the frame which sustains the moving parts of the machine.

B is the adjustable pad-piece, hung in a frame and having a polishing-pad a' a^2 on each of its two sides, as shown in the drawings.

C is the upper circular piece, which carries the plate 2 around under the pad-piece B.

D is a like circular piece connected with the upper one by means of the posts or binders $b b b b$. These two united pieces are supported upon a shaft E, which is adapted to rotate in a perpendicular position, sustained by means of the two lower pieces $c c$ of the frame A. The shaft E and the upper circular piece C are connected together by means of four arms F F F F, which are fixed upon the upper end of the shaft and connect by means of four cranks G G G G near the ends of the arms with the said upper circular piece, as shown in the drawings. The shaft E passes eccentrically and loosely through a circular plate or disk H, which fits loosely in an appropriate hole in the center of the lower circular piece D, and also loosely through the center of a spur-wheel I, which is fixed to the bottom or lower side of the eccentric piece, and immediately below this spur-wheel another spur-wheel K, somewhat less in diameter, is concentrically fixed to the shaft.

Upon a stud fixed in the piece c of the frame A at La pair of like spur-wheels M and N, riveted together concentrically, are adapted to rotate in gear connection, respectively, with the two spur-wheels on the shaft, so that when rotation is given to the shaft E by means of the hand-crank O beneath the frame or by any other suitable means the fixed spur-wheel K thereon causes a rotation of the united wheels M N, and the upper one N being in gear connection with the spur-wheel I, which is fixed to the eccentric plate H, and both turning loosely upon the shaft E, causes the two circular pieces D and C (which are rigidly united together and also connected by the cranks G and arms F to the driving-shaft E, as before described) to gyrate or whirl round horizontally. The plate or plates to be polished are fixed upon a block P, which is fixed centrally upon the upper surface of the upper circular piece C and the adjustable pad-piece brought down by hand, so as to rest with the pad upon the surface of the plate or plates to be polished. The pad-piece is made to swing in its frame, so as to enable the operator to use with facility either side or the coarse and fine pad in succession, as occasion may require.

In the operation of the machine it will be perceived from the description, illustrated by the drawings, that the circular pieces C D are carried round by the rotation of the shaft E and arms F, (they being connected therewith by means of the cranks G,) and that the eccentric H being confined in the center of the lower circular piece D and driven at a different speed from that of the shaft E, upon which it turns, the circular piece C, with the fixed block P, to which the plates are attached, is necessarily caused to gyrate or whirl around in continually-changing circular motions, and that, the pad being held down thereon by the hand of the operator or by a weight of any kind, the polishing is effected as desired. The diameter of the greater circle of motion, it is also apparent, will be proportionate to the throw of the eccentric, and the numerical relation between the smaller circles and the greater will be governed by the relative diameters of the spur-wheels, both of which are matters allowing discretionary latitude in the construction of the machine. It will be apparent, also, that the effect will be the same

if the pad and plates are made to change places, respectively, in the construction of the machine, so that the plates shall remain stationary while the pad gyrates with the circular piece C.

Having thus described the construction and operation of my invention, I proceed to state that I do not claim effecting a gyratory motion of the pad for polishing the surfaces of daguerreotype-plates or other like surfaces by means of machinery, as such has been so effected before for similar purposes; but

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

The shaft E, with its arms F, cranks G, the pieces C and D, (or their equivalents,) and the eccentric H, with its spur-wheel I, in combination with the united spur-wheels M and N and the spur-wheel K, when constructed and arranged substantially and for the purposes as described.

DAVID SHIVE.

Witnesses:

JONATHAN H. WATERS,
J. MITCHELL.