(No Model.)

M. L. POWERS.

POLISHING MACHINE.

No. 435,709. Patented Sept. 2, 1890.

Fig. 1

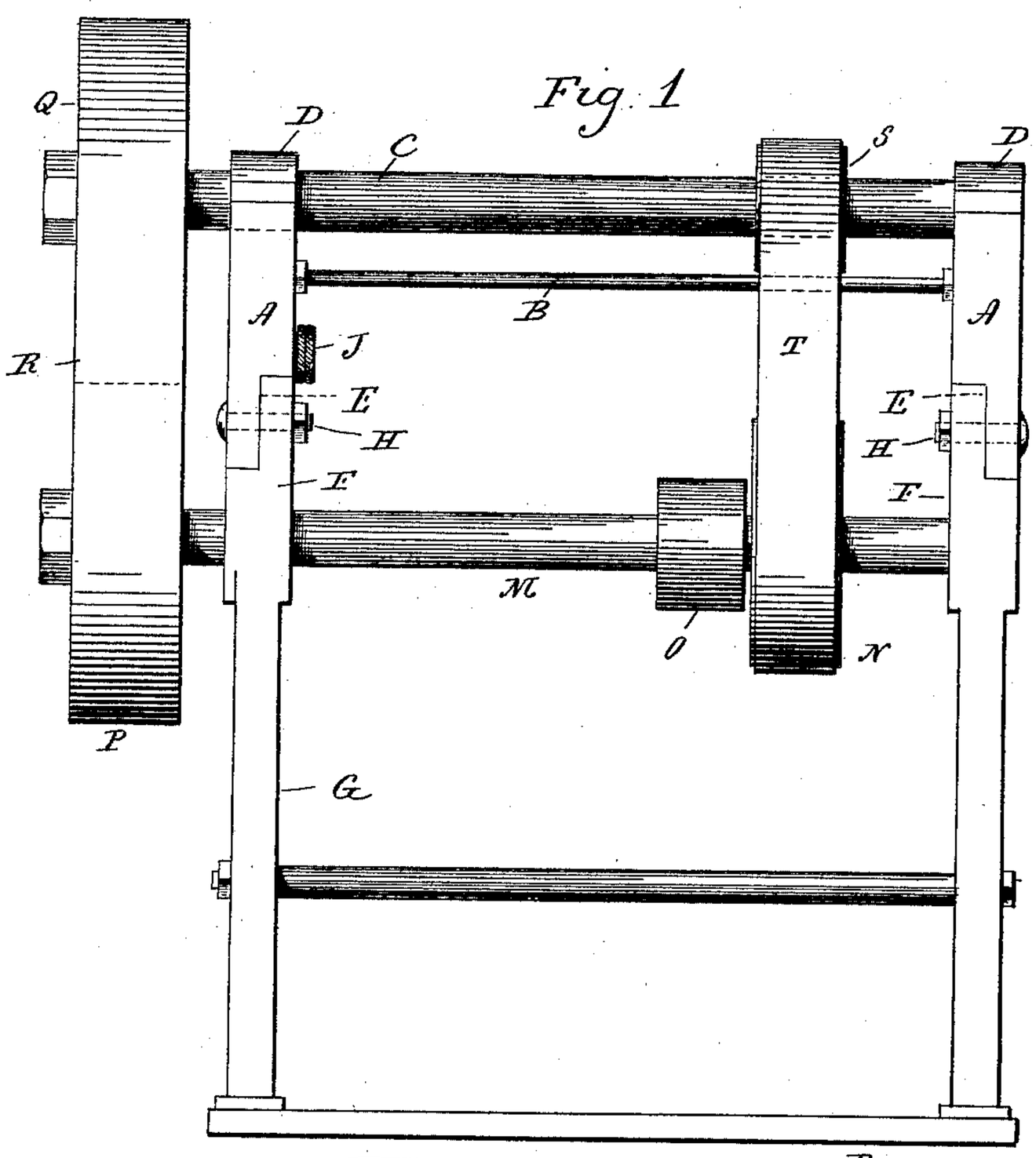


Fig. 2

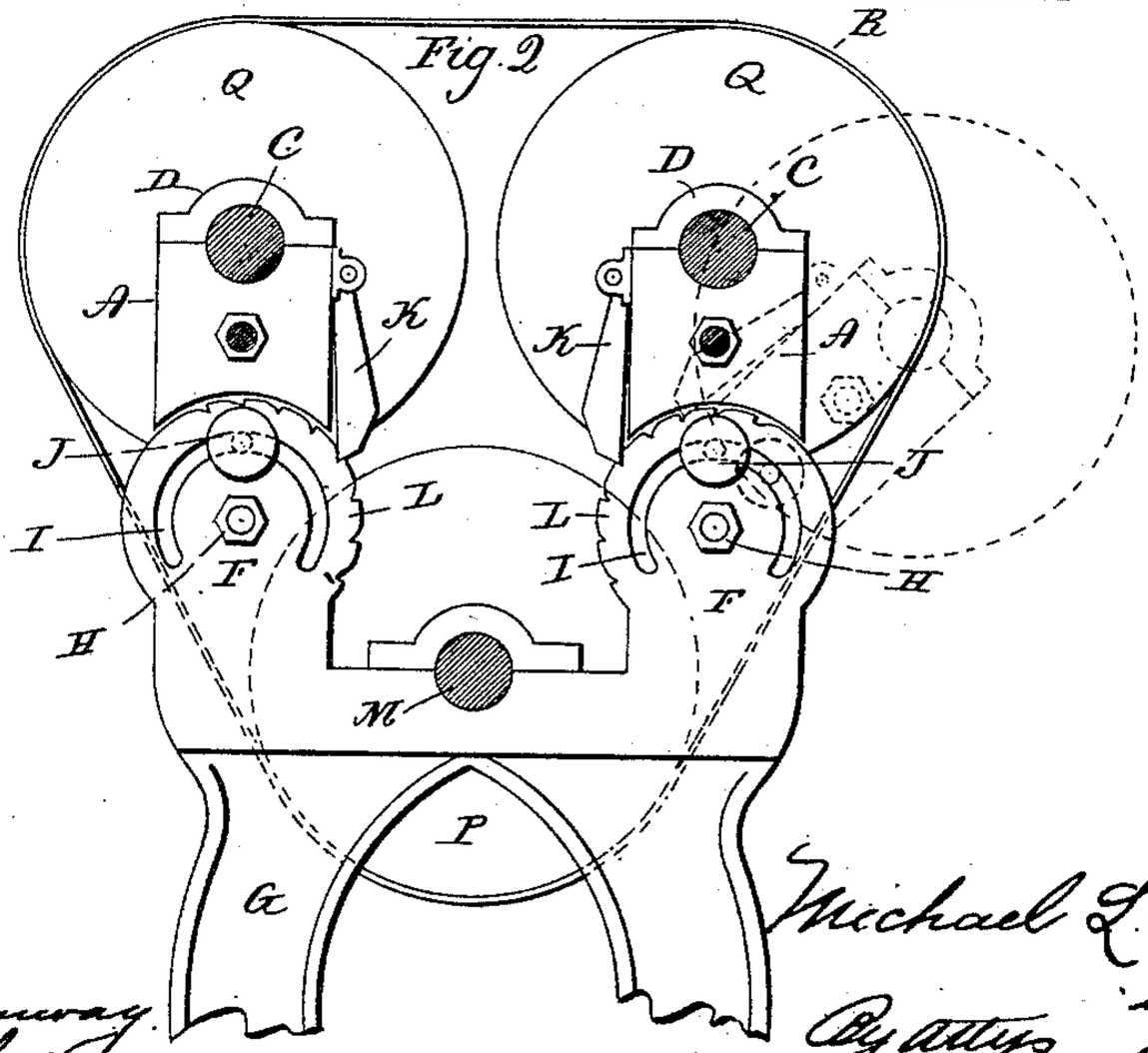
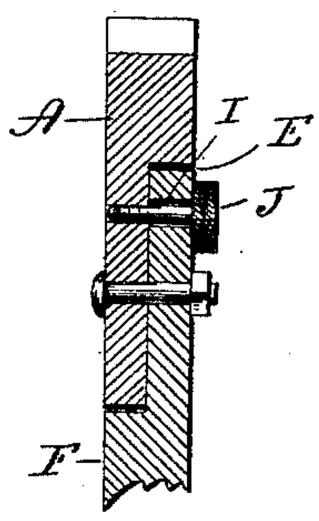


Fig. 3



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MICHAEL L. POWERS, OF UNIONVILLE, CONNECTICUT.

POLISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 435,709, dated September 2, 1890.

Application filed February 24, 1890. Serial No. 341,484. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL L. POWERS, of Unionville, in the county of Hartford and State of Connecticut, have invented new Improvements in Polishing-Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of my improved polishing-machine; Fig. 2, a view thereof in end elevation, showing the adjustable frames in their upright positions by full lines and one frame in an inclined position by dotted lines; Fig. 3, a detached enlarged sectional view, showing the provision for clamping the frames in any position of adjustment.

My invention relates to an improvement in polishing-machines, the object being to produce a simple and strong machine adapted to be very quickly and conveniently adjusted for placing the required tension upon the polishing-belts and also for replacing the belts and for converting the machine for different kinds of work.

With these objects in view my invention consists in a polishing-machine having two frames pivoted at their inner ends to the machine-frame and each having a pulley-shaft journaled in its outer end and carrying one or more pulleys, which are driven by polishing-belts also running over pulleys mounted on the driving-shaft of the machine, which is located centrally to the pivotal points of the said frames, so that by swinging the same they may be varied in distance from the driving-shaft.

As herein shown, each of the swinging frames is composed of two arms A A and a brace B, extending between them, the outer ends of the said arms being adapted to have a shaft C journaled in them and thereto provided with journal-boxes D. The inner ends of the arms are recessed on their inner faces, as at E, to adapt them to fit over extensions F, forming a part of the machine-frame G, the outer edges of the said extensions being formed on a circle, as well as the upper wall of the recesses E formed in the said arms. Bolts H, passing through the inner ends of the arms and said extensions F of the frame, join them together and form fulcrums for the frames to swing upon. Each of the extensions is provided with a segmental slot I, receiving a clamping-screw J, which is threaded into and carried by the lower ends of the arms and provided for clamping them to the said extensions. The strain tending to pull the two adjustable frames toward each other is resisted by means of pawls K, hung from their upper ends from the inner edges of each of the arms and engaging at their lower ends with ratchet-teeth L, formed in the outer edges of the extensions F of the machine-frame and cut so as to trip the pawls when the adjustable frames are swung outward or away from each other, but to engage them and locks the frames against inward movement, for which purpose the pawls must be temporarily disengaged from the teeth.

A driving-shaft M, journaled in the machine-frame G at a point central to the fulcrums of the two adjustable frames, is connected in any suitable manner with any convenient source of power, and carries, as herein shown, three driving-pulleys N, O, and P, the number of pulleys carried by it depending, of course, upon the work to be demanded of the machine. One end of each of the shafts C is provided with a pulley Q, corresponding, as herein shown, to the pulley P on the driving-shaft M. These three pulleys Q Q and P carry a polishing-belt R, on which flat or slightly-convex surfaces may be polished.

As shown by Fig. 1 of the drawings, one of the shafts C is provided with a small pulley S, which co-operates with the pulley N on the driving-shaft before mentioned in carrying a polishing-belt T, which may be run slack or tight, according to the demands of the work being done, by simply changing the adjustment of the adjustable frame carrying the shaft C, on which the said pulley S is mounted. The pulley O, mounted on the driving-shaft M, may carry a polishing-belt running directly over one of the shafts C or over a pulley mounted on one of the said shafts, but not herein shown. These pulleys and belts are only shown to illustrate applications of the

machine, and need not, of course, be followed in their arrangement in the machine when it is set up for use.

As will appear from the foregoing description, either of the adjustable frames may be shifted in position and so altered in its relation both to the other frame and to the driving-shaft, which is central to both frames, whereby the tension of the polishing-belts may be very easily regulated according to the demands of the work being done. The provision for adjustment in the frames also adapts the machine to be very readily converted for different kinds of polishing by shifting and changing the pulleys and belts, as may be required. After being adjusted the adjustable frames are prevented from being moved toward each other, as before described, by means of pawls which they carry, and are clamped in their adjusted positions by means of clamping-screws J, which secure them firmly in place and against rattling.

I would have it understood that I do not limit myself to the exact construction and arrangement of parts herein shown and described, but hold myself at liberty to make such changes and alterations as may fairly fall within the spirit and scope of my invention.

I am aware that it is not broadly new to mount the pulleys of polishing-machines on movable supports, so as to permit the tension of the belt running over them to be varied. I do not, therefore, broadly claim such a construction; but,

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a polishing-machine, the combination, with the frame thereof, of two upwardly-extending adjustable frames respectively located on opposite sides of the machine-frame and having jointed connection at their lower ends therewith, a pulley-shaft mounted in the outer end of each of the said frames, a driving-shaft mounted in the machine-frame and located below and central to the said frames, and means for securing the frames in their adjusted positions, substantially as described.

2. A polishing-machine having two adjustable pivotal frames, each consisting of two arms and means for joining the same, and each arm being adapted at its inner end to form a jointed connection with the machine-frame, pawls carried by the adjustable frames, and teeth formed upon the machine-frame and arranged for tripping the pawls when the adjustable frames are moved away from each other and for engaging the pawls when the adjustable frames are moved toward each other, and means for clamping the said arms to the machine-frame, substantially as described.

3. In a polishing-machine, the combination, with the frame thereof, of two upwardly-extending adjustable frames respectively located on opposite sides of the machine-frame, and each composed of two arms connected together and having jointed connection with the machine-frame, a pulley-shaft mounted in the outer ends of the arms of each frame, a driving-shaft mounted in the machine-frame, and clamping-screws carried by the arms and playing in segmental slots formed in the machine-frame, substantially as described.

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Witnesses:
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