

No. 754,849.

PATENTED MAR. 15, 1904.

J. P. CLINE.  
HAND OR FOOT POWER MACHINE.

APPLICATION FILED JULY 25, 1903.

NO MODEL.

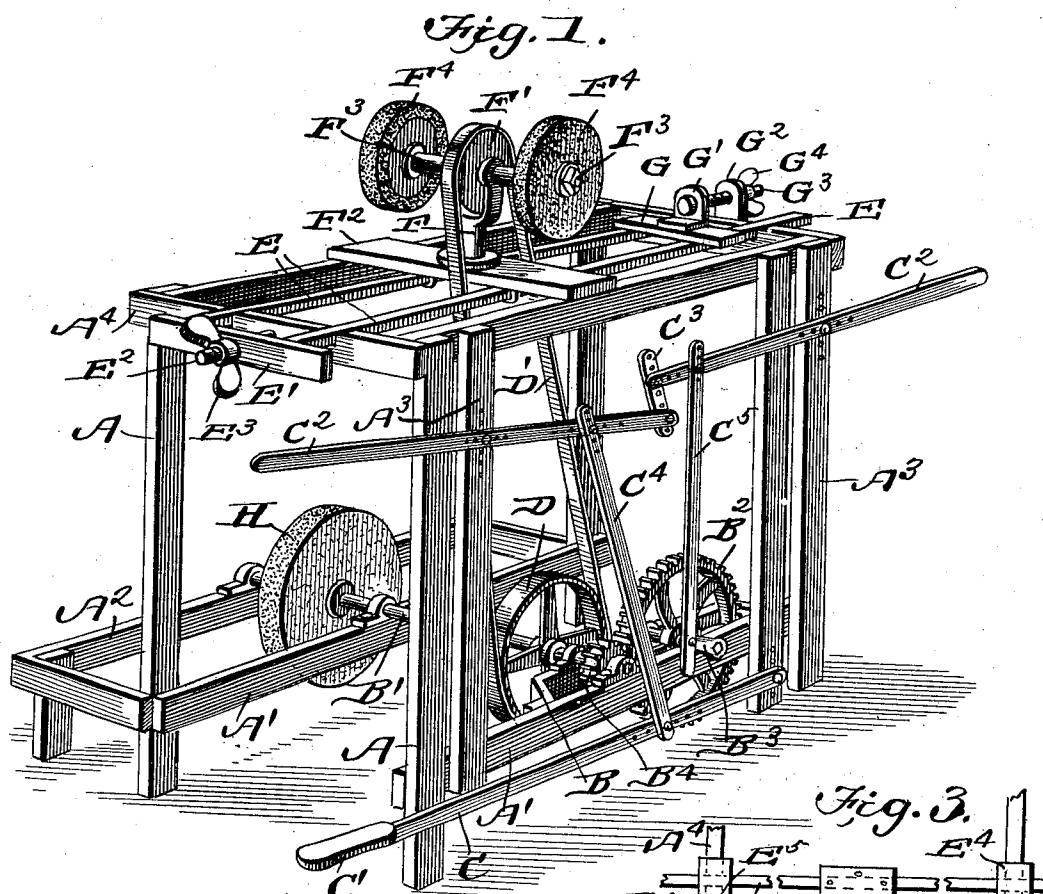


Fig. 2.

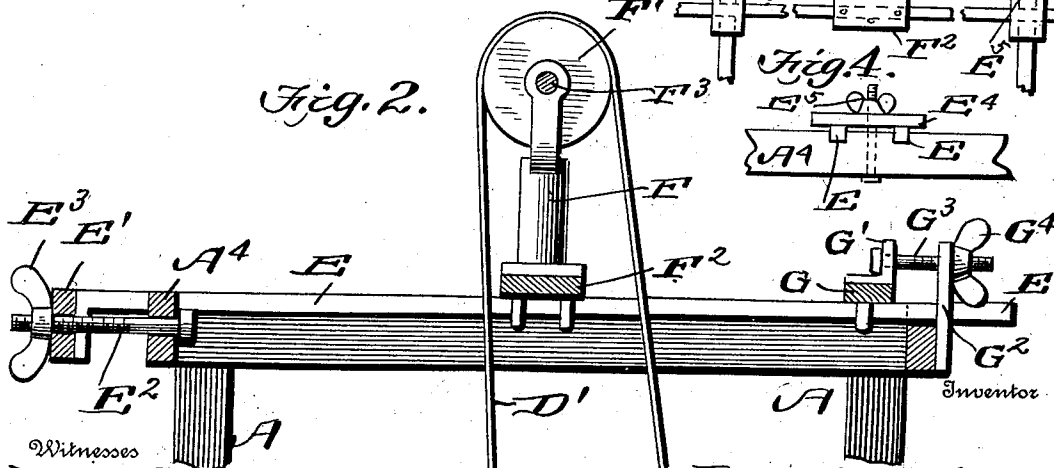


Fig. 3.

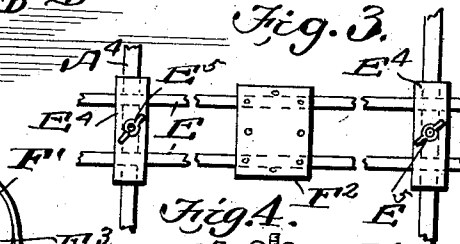
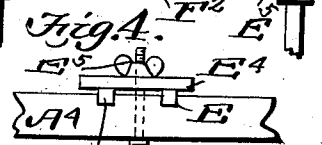


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JAMES P. CLINE, OF CHARITY, MISSOURI.

## HAND OR FOOT POWER MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,849, dated March 15, 1904.

Application filed July 25, 1903. Serial No. 167,005. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. CLINE, a citizen of the United States, residing at Charity, in the county of Dallas and State of Missouri, have  
 5 invented a new and useful Hand or Foot Power Machine, of which the following is a specification.

My invention is an improvement in combined foot and hand power machines and is  
 10 shown in connection with emery-wheels. The mechanism shown can of course be used with other devices than polishing and grinding wheels, as it can be utilized in connection with small lathes, scroll-saws, drills, &c.

15 My invention consists of the novel features of construction and combination of parts described hereinafter, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

20 Figure 1 is a perspective view of my device. Fig. 2 is a detail side elevation showing the operation of the belt-tightening device. Fig. 3 is a slightly-modified form of clamp. Fig. 4 is an end elevation of the parts shown in  
 25 Fig. 3.

In constructing my device I employ a frame A, having the lower horizontal cross-pieces A'. To the inner side of one of these cross-pieces is secured a bracket B. On the opposite  
 30 side of the frame is arranged a horizontal supplemental frame A<sup>2</sup>. On the cross-pieces A', frame A<sup>2</sup>, and bracket B are arranged metal bearings, and in same is journaled a shaft B'. A stub-shaft is journaled on the  
 35 bracket and the cross-piece A' to which the bracket is attached, and a gear-wheel B<sup>2</sup> is mounted on said stub-shaft.

Pivoted at one end to the lower portion of the frame is a foot-lever C, having a treadle  
 40 C' formed on its free end. To vertical uprights A<sup>3</sup> are adjustably pivoted, intermediate their ends, hand-levers C<sup>2</sup>, the inner ends of these two levers approaching each other, the inner end of one lying slightly below the inner  
 45 end of the other one and their outer handle ends projecting beyond the ends of the frame A. A link C<sup>3</sup> is adjustably pivoted to the inner ends of the levers C<sup>2</sup>, pivotally connecting the two levers together. A downwardly-extending link C<sup>4</sup> is adjustably pivoted

adjacent its upper end to one of the levers C<sup>2</sup> and at its lower end to the foot-lever C. To the remaining lever C<sup>2</sup> is adjustably pivoted the upper portion of a link C<sup>5</sup>, which is pivoted at its lower end to a crank B<sup>3</sup>, which latter  
 55 rotates the gear-wheel B<sup>2</sup>. A pinion B<sup>4</sup> is fixedly mounted on the shaft B', rotating same. A pulley D is also rigidly secured to said shaft. On the upper part of the frame A are end pieces A<sup>4</sup>, notched on their upper faces, and in these notches slide the parallel side members E of an elongated movable frame. A bracket F, having a driven pulley F' mounted between its arms, is secured on a base F<sup>2</sup>, which rests  
 60 transversely across the members E.

A belt D', running over the drive-pulley D, extends upward through the frame upon either side of the base and over the pulley F'. The shaft F<sup>3</sup>, on which the pulley F' is mounted, is journaled in the arms of the bracket F and  
 70 extends outward upon each side of the bracket and has rigidly mounted thereon grinding or polishing wheels F<sup>4</sup>.

The sliding frame, having the side members E and supporting the base F<sup>2</sup>, has at one end  
 75 an end piece E', having a threaded aperture therein. A threaded bolt E<sup>2</sup> is passed through the piece A<sup>4</sup>, the threaded portion of which engages the threaded aperture in the end piece E'. A thumb-piece E<sup>3</sup> works on the outer  
 80 end of the bolt. A cross-piece G rests on the members E adjacent the end of the machine opposite the end piece E', and on this cross-piece is a bracket G'. A bracket G<sup>2</sup> is secured to the end of the frame A and has a threaded  
 85 perforation in which works the threaded end of a bolt G<sup>3</sup>, having a thumb-piece G<sup>4</sup>. A grindstone H is mounted on the shaft B in the supplemental frame.

By means of this construction the gear B<sup>2</sup>  
 90 may be rotated by hand or foot power, or both combined. The mechanism may be driven by two men, one at each end of the machine, grasping the handles C<sup>2</sup>, or one man only can operate the device and operate it from either end.  
 95 By sliding the members E the pulley F' will be moved along the frame and the belt D' tightened or loosened, as desired.

In Fig. 3 I have illustrated a slightly-modified form of clamping the belt-tightener 100

frame to the main frame. A clamping-board E<sup>1</sup> is arranged across the side members E of the tightening-frame, and the end piece A<sup>4</sup> and clamping-board E<sup>4</sup> are perforated. To  
 5 tighten the belt, the side members are moved until the perforations of the clamping-boards aline with those of the end pieces A<sup>4</sup>, and the frame is then clamped in the usual way by the bolt and nut E<sup>5</sup>.

10 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the kind described comprising a foot-lever, a hand-lever, a link connect-  
 15 ing said hand-lever with the foot-lever, a second hand-lever projecting in a direction opposite to that of the first, a link pivotally connecting the two hand-levers and a link connect-  
 ing the second hand-lever with a crank-arm.

20 2. A device of the kind described comprising a frame, a gear having a crank-arm, a hand-lever pivotally secured to each end of the

frame, the pivotal points being adjustable, an adjustably-pivoted link connecting the inner  
 ends of the two levers, and an adjustable link  
 25 connecting one lever with the crank-arm.

3. A device of the kind described comprising a main frame, a rotatable shaft journaled therein, a gear-wheel having a cranked arm journaled adjacent said shaft a pinion on the  
 30 shaft meshing with the gear-wheel, a foot-lever pivoted to the frame, a hand-lever pivoted to the frame, a link connecting the hand and foot levers, means for connecting the hand-lever and the crank-arm of the gear-  
 35 wheel, a pulley on the shaft, a movable frame sliding on the main frame, a pulley carried on the movable frame and a belt running over the two pulleys.

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