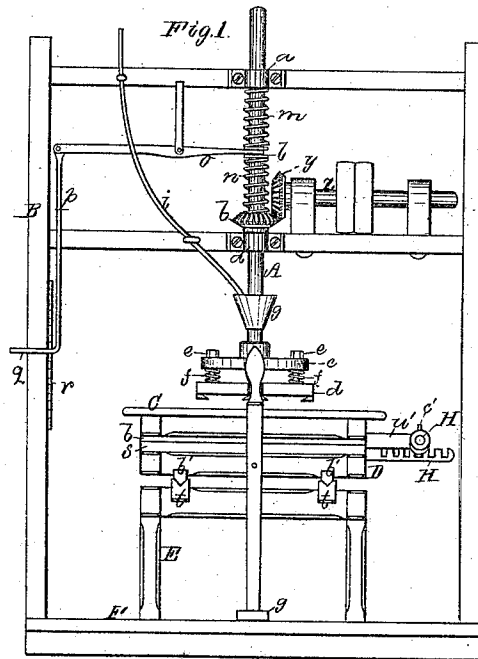
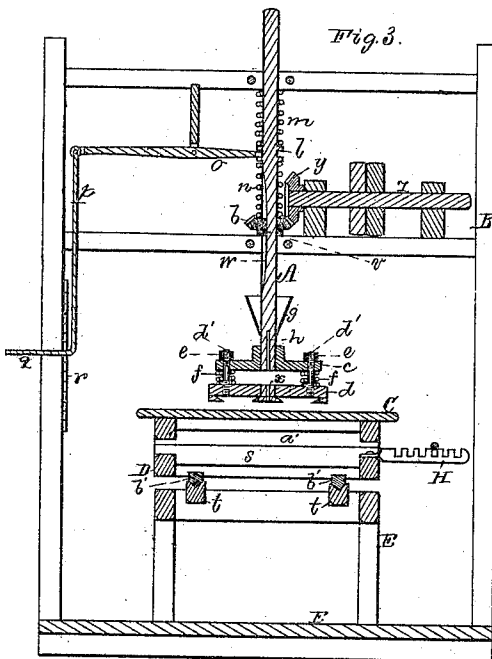
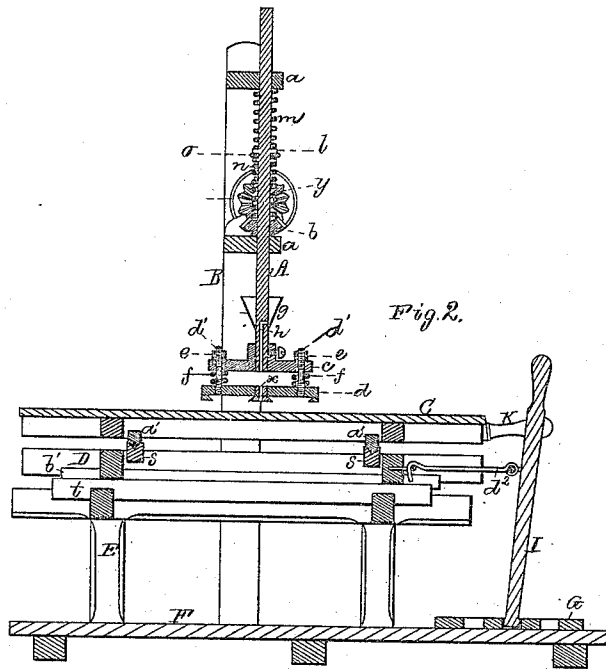


J. FINN.

STONE-POLISHING MACHINE.

No. 172,617.

Patented Jan. 25, 1876.



Witnesses.

S. W. Piper

L. M. Müller.

James Finn.

by his attorney.

R. H. Eddy.

UNITED STATES PATENT OFFICE.

JAMES FINN, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN STONE-POLISHING MACHINES.

Specification forming part of Letters Patent No. **172,617**, dated January 25, 1876; application filed November 16, 1875.

To all whom it may concern:

Be it known that I, JAMES FINN, of Cambridgeport, of the county of Middlesex and State of Massachusetts, have invented a new and useful Machine for Grinding or Polishing Surfaces; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation, Fig. 2 a longitudinal section, and Fig. 3 a transverse section, of it.

In such drawings, A denotes what I term the "grinder-head shaft," which stands vertically within a frame, B, is arranged in a suitable bearing, *a*, and extends through and is provided with a driving-gear, *b*, connected with such shaft by a projection, *v*, extending from said gear into a groove, *w*, made lengthwise in the shaft. This shaft is to be capable of sliding vertically in its bearings. It has affixed to its lower end a head or disk, *c*, beneath which there is a cross, *d*, for receiving and supporting the polishing-stones or grinders wedged to its arms. This cross is held to the disk *c* by a series of screw-bolts, *d'*, extending from it up through the disk, and held thereto by nuts *e* screwed on such bolts, there being a helical spring, *f*, on that part of each bolt which is between the cross and the disk, all being as represented. Encompassing the shaft is a tunnel or conical vessel, *g*, from the lower part of which a passage, *h*, leads into the shaft, and downward to its lower end, there being a hole, *x*, through the cross at its center. A pipe, *i*, fixed to the frame B, extends out or directly over the mouth of the tunnel, such pipe being to lead water from a tank into the tunnel. For the purpose of determining the amount of flowage of the water from the pipe, as well as to arrest it altogether, as circumstances may require, such pipe may be provided with a stop-cock. A small circular ring or collar, *l*, grooved around its periphery, and encircling and fixed to the shaft, receives in the grooved end of a lever, *o*. Two helical springs, *m n*, encompass the shaft, with the aforesaid collar against and directly between them. The upper of these springs, at its upper end, rests against the upper bearing *a*, while the lower spring rests, at

its foot, on the driving-gear *b*, which engages with another such gear, *y*, fixed on a driving-shaft *z*, arranged as shown, and provided with one fast and one loose pulley. The said lever *o* is pivoted to an arm, *p*, extended down from the frame B, and has to its longer arm a hooked handle or pendant, *q*, to catch into a toothed rack, *r*, fixed to the frame, and arranged as shown. The lever *o*, the lowermost spring *n*, the hooked pendant *q*, and the rack *r* constitute a presser, or means of pressing the shaft A downward, in order to force and maintain the grinders or polishers in contact with the slab of marble or article to be reduced, such slab or article being placed and fixed, if necessary, on a movable platform, C, arranged under the shaft, provided with parallel tongues *a' a'*, resting in grooved parallel guideways or rails *s s*, projecting upward from a carriage, D, that, in turn, has parallel tongues *b' b'*, that rest on other and parallel grooved guide-rails *t t*, supported by a stand, E, and arranged at right angles to the rails *s s*. The stand E rests on the floor F, upon which is fixed one of two pivotal racks, G H, to receive the ends of two levers, I K. The other of the said racks projects from the carriage D. One of the levers works in a horizontal plane and the other in a vertical one, and one lever is connected with the platform C by an arm, *u'*, extended therefrom, the lever going loosely through the arm, and being held in place by pins *c' c'* going through it. The other lever is connected to the carriage D by a connecting-rod, *d²*, hinged to both lever and carriage D, all being as shown.

The slab or slabs to be ground or polished being secured upon the platform C, and grinding-stones or polishers being fixed to the arms of the cross *d*, and the shaft A being put in revolution, an attendant, by means of the presser, should depress the shaft, so as to force the grinders or polishers down upon, and hold them in contact with, the surface to be reduced. This having been done, he next is to seize hold of the levers with his hands, and move, from time to time, the said levers, so as bring the entire upper surface of the slab or stone under the action of the grinders or polishers, he in the meantime moving the levers along in their racks, as may be necessary, to

enable him to advance the slab either endwise or lengthwise. The water supplied to the tunnel will run into and down through the shaft, and be discharged upon the cross and the slab.

The levers and their pivotal racks enable an attendant to impart to the slab or its carriage motions in directions at right angles to each other, or others which are the resultants of such motions at right angles, and thereby to move the slab along under the grinders, so as gradually to bring its entire surface under their operation.

The springs against which the cross rests enable the grinders to readily adapt themselves to the surface to be dressed.

In the above-described machine, I claim as my invention as follows, viz:

1. The combination of the racks G H and levers I K with the platform C and its supporting-carriage D, provided with sustaining-ways, arranged as specified.

2. The grinder-head shaft A, provided with the tunnel *g* and the eduction-passage *h*, arranged with said shaft in manner and to operate with the stationary pipe *i*, as set forth.

JAMES FINN.

Witnesses:

R. H. EDDY,
J. R. SNOW.