

(No Model.)

J. W. MALOY.  
STONE POLISHING MACHINE.

No. 327,288.

Patented Sept. 29, 1885.

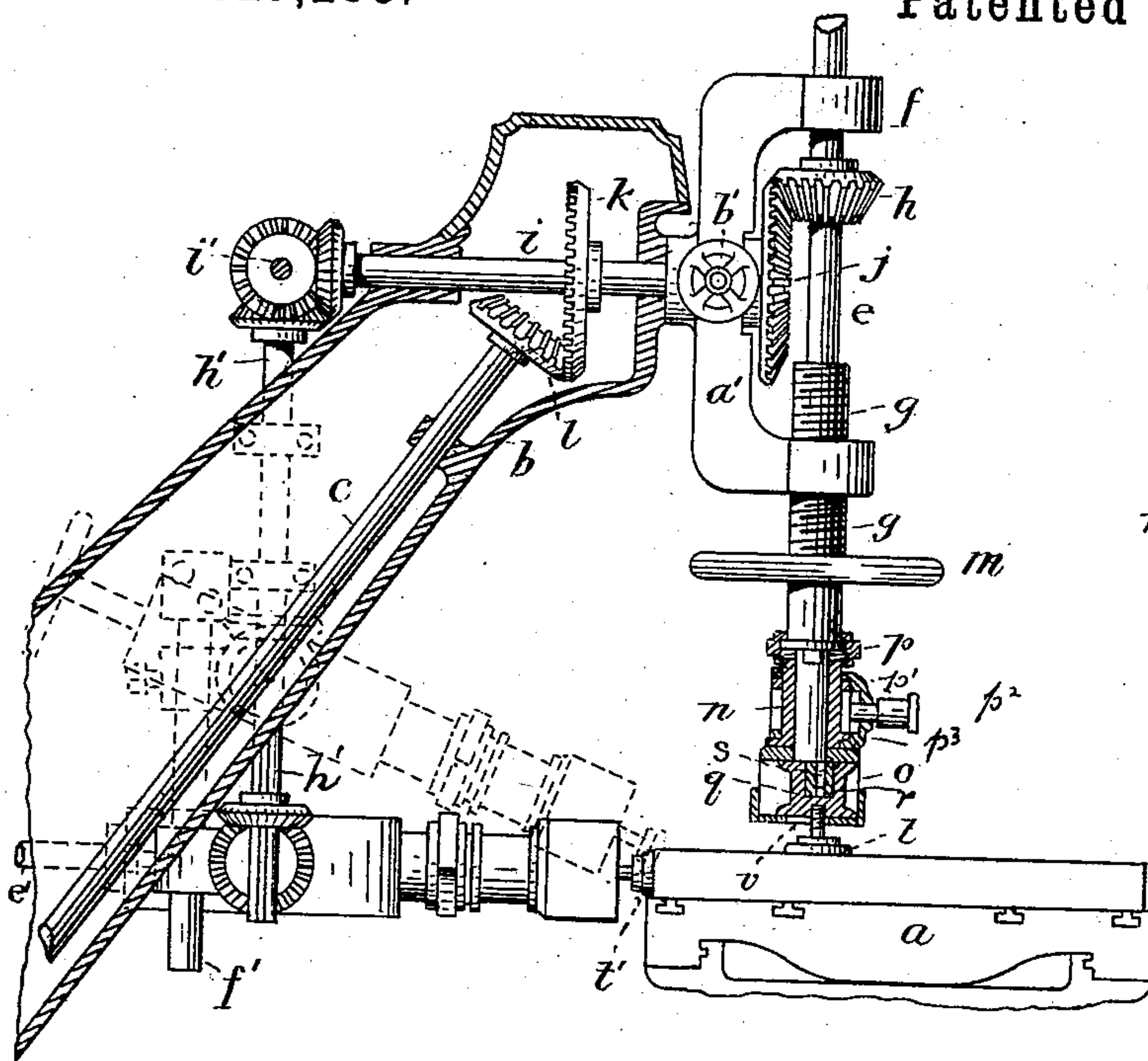


Fig. 1.

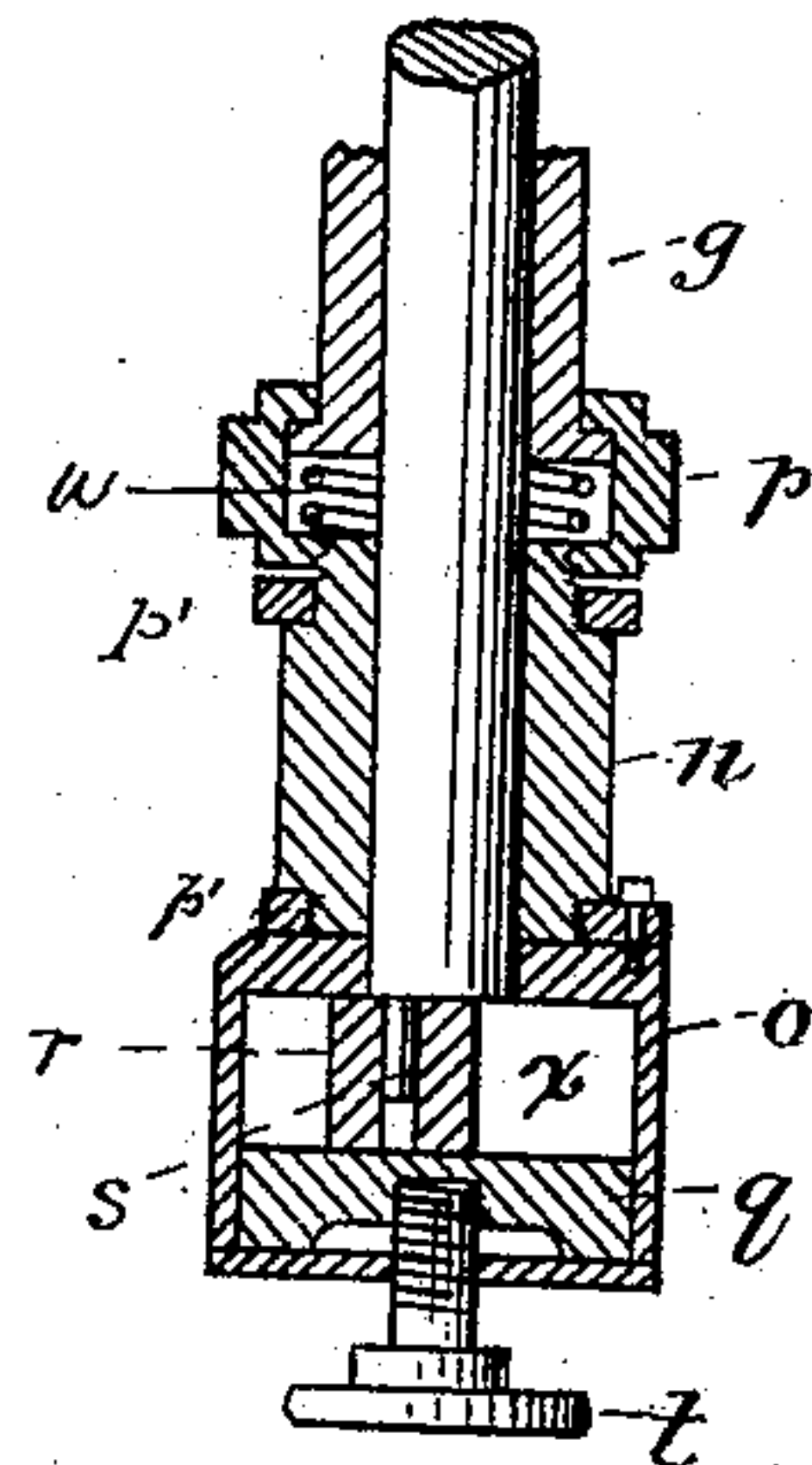
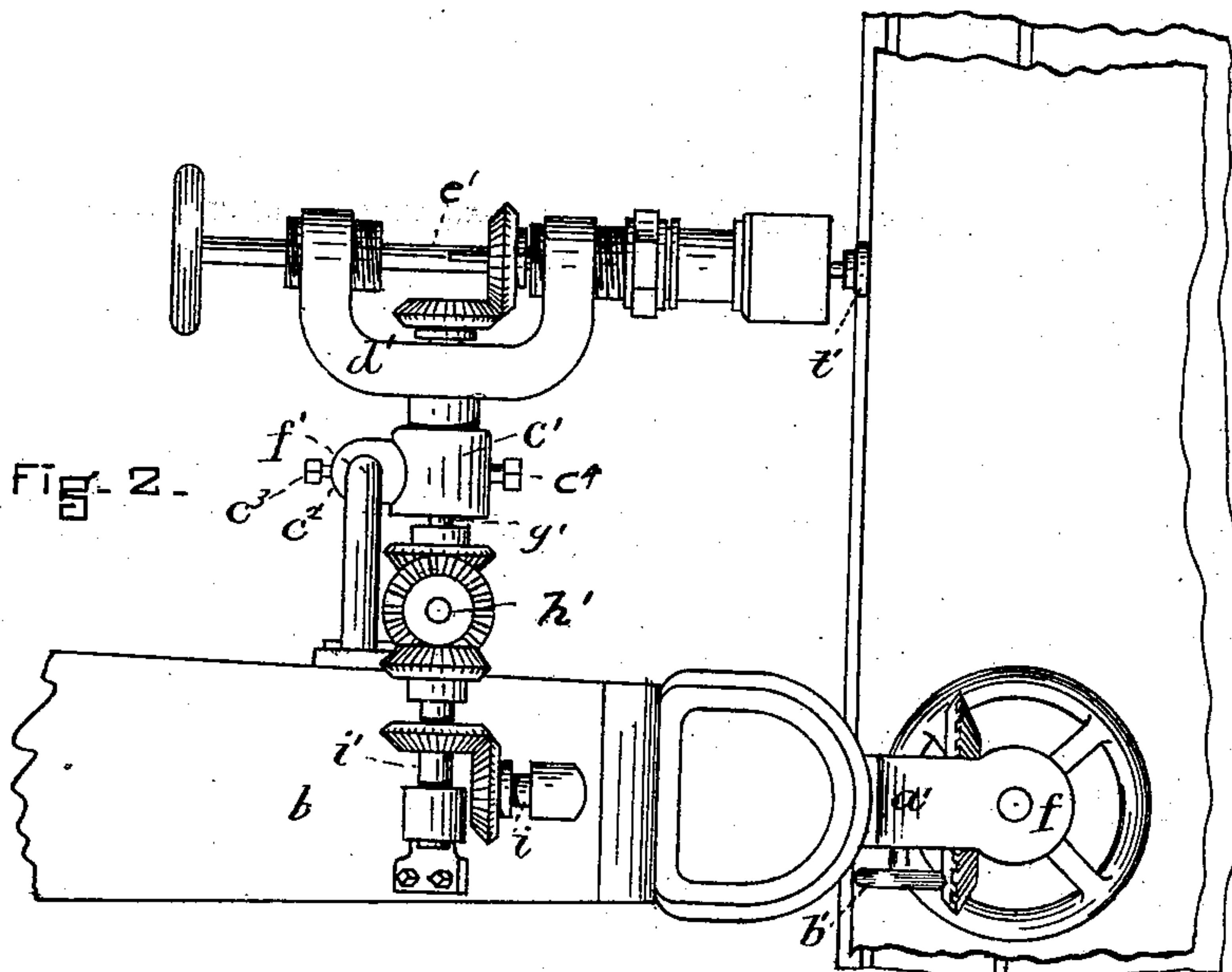


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES W. MALOY, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN MARBLE CUTTING COMPANY.

## STONE-POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,288, dated September 29, 1885.

Application filed May 22, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. MALOY, of Boston, (Somerville,) in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Stone-Polishing Machines, of which the following is a specification.

This invention has for its object to provide improved means for polishing the surfaces of stone slabs or blocks; and it consists in the provision of mechanism for reciprocating a polishing pad or tool and for varying the direction of the reciprocating movement as may be desired, so that the tool may rub the same surface in several different directions.

The invention also consists in the provision of means for varying the plane in which the tool reciprocates, thus adapting the tool to surfaces arranged in different planes—as, for example, to vertical and differently inclined or beveled surfaces—all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation, partly in vertical section, showing my improved mechanism. Fig. 2 represents a top view of the same. Fig. 3 represents an enlarged vertical section at right angles to the same parts shown in section, Fig. 1, of a portion of the mechanism, including the polishing pad or tool.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a supporting-bed for the stone to be polished. Said bed may be made movable in any horizontal direction, like the bed shown in my application for Letters Patent for stone-dressing machine, filed January 5, 1884, Serial No. 116,520, so that any portion of the upper surface of the stone, slab, or block on said bed may be brought into position to receive the action of the reciprocating polishing tool or tools hereinafter described.

*b* represents an overhanging arm, in which is journaled a shaft, *c*, which communicates power from a prime motor.

*e* represents a spindle rotating in bearings *f g*, supported by the arm *b*, and receiving motion from the shaft *c*, through suitable connections, which in this instance are a bevel-gear, *h*, on said spindle, a shaft, *i*, journaled in the

arm *b*, and gears *j k* on said shaft meshing, respectively, with the bevel-gear *h* on the spindle and with a bevel-gear, *l*, on the shaft *c*.

The lower bearing, *g*, of the spindle is externally threaded and works in a threaded supporting-socket, so that it can be adjusted vertically, a hand-wheel, *m*, being affixed to said bearing to facilitate its rotation.

To the lower end of the bearing *g* is swiveled a collar, *n*, through which the spindle *e* passes, said collar having a flanged coupling, *p*, screwed upon its upper end, the flange of said coupling bearing on a flange on the lower end of the bearing *g*, as shown in Figs. 1 and 3.

To the lower portion of the collar *n* is attached a casing, *o*, which may be oval, cylindrical, rectangular, or of other suitable form, and be attached to collar *N* by screws, bolts, solder, or any other manner well known to mechanics, in which a block, *q*, is adapted to reciprocate. Said block has a longitudinal slot, *x*, which receives a slide, *r*, said slide in turn receiving an eccentric-pin, *s*, on the lower end of the spindle *e*.

A rubbing-tool, *t*, of any suitable construction, is attached to the block *q*, the shank of said tool passing through a slot, *v*, in the bottom of the casting *o*.

It will be seen that the rotation of the spindle *e* causes the eccentric-pin *s* and slide *r* to reciprocate the block *q* and tool *t*. The swivel connection of the collar *n* to the support or bearing *g* enables the casing *o* to be turned so as to cause the block *q* and its tool to reciprocate in any desired direction, thus enabling the tool to rub in a direction at any desired angle to the direction in which it may have previously rubbed the same surface.

A spring, *w*, may be inserted between bearing *g* and collar *n* to cause the latter to be held down with elastic pressure. A pair of bands, *p'*, may surround the collar *n*, and a handle, *p''*, be mounted on a bar, *p'''*, connecting these bands.

A high polish may be imparted by thus rubbing the same surface in different directions.

The vertical adjustability of the bearing *g* enables the spindle to be adjusted vertically to adapt the rubbing-tool to the thickness of the stone.

The bearings *f g* of the spindle may be rig-



idly attached to the arm *b*, but are shown in the present instance as formed on an arm, *a'*, which is pivoted upon a stud or boss on the arm *b*, the shaft *i*, through which motion is communicated to the spindle, passing through said stud. The spindle may be inclined at any desired angle by turning the arm *a'*, a set-screw, *b'*, or other suitable device being provided to hold said arm in any position to which it may be turned. The tool can thus be caused to act on diagonal surfaces, such as the beveled edges of slabs.

*e'* represents another spindle, journaled in bearings in a yoke, *d'*, which is pivoted in a collar or holder, *c'*, so that it can be turned to cause the spindle *e'* to stand horizontally, as shown in full lines in Fig. 1, or at any desired inclination. The holder *c'* is detachably secured to a fixed vertical rod, *f'*, by means of an ear, *c<sup>2</sup>*, and a set-screw, *e<sup>3</sup>*. The holder *c'* may therefore be adjusted vertically so that the spindle *e'* may be inclined as shown in dotted lines in Fig. 1. A set-screw, *c<sup>4</sup>*, or other suitable device holds the spindle *e'* at any desired inclination it is capable of assuming.

A rubbing-tool, *t'*, is arranged to be operated by the rotation of the spindle *e'* in the same way that the tool *t* is operated by the spindle *e*. The tool *t'* is therefore adapted to operate either on a vertical or a beveled surface, provision being thus made for polishing the edges as well as the top surfaces of slabs or blocks of stone.

The spindle *e'* is rotated by means of a horizontal shaft, *g'*, journaled in the yoke *d'* and geared to the spindle *e'*, a vertical shaft, *h'*, geared to the shaft *g'*, and a short horizontal shaft, *i'*, geared to the shaft *h'* and to the shaft *i*.

It is obvious that many of the details of the described mechanism may be varied without departing from the spirit of my invention.

It will also be seen that either of the rubbing-tools *t* or *t'* and its operating mechanism

can be employed without the other. Two tools, *t'*, may be employed, one at each side of the arm *b*, and adapted to operate simultaneously.

I claim—

1. In a stone-dressing machine, the combination, with a support, of a reciprocating rubbing-tool held centrally beneath said support, and an intervening swiveled joint whereby the direction of reciprocation may be changed without materially changing the position of the tool, substantially as set forth.

2. The combination of the overhanging arm, the swiveled arm *a'*, supported therein, the spindle journaled in said arm, and the reciprocating tool driven thereby, said tool supported on a swiveled collar from a bearing on said shaft.

3. In combination, with the supporting-arm *b*, the arm *a'*, swiveled thereto, the spindle journaled in said arm, the screw-bearing *g*, surrounding said spindle and supported by arm *a'*, the collar *n*, swiveled to piece *g*, and the reciprocating tool suspended from said collar, substantially as described.

4. The combination, with the spindle *e* and the screw-threaded bearing *g*, of the collar *n*, swiveled to said bearing, the spring interposed between said bearing and collar, and the reciprocating tool supported by the collar, as set forth.

5. The combination, with the single supporting-arm *b*, of the two reciprocating tools supported thereby and jointed thereto at different angles, and driving mechanism, substantially as described, whereby the tools may be reciprocated, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of May, 1884.

JAMES W. MALOY.

Witnesses:

C. F. BROWN,  
A. L. WHITE.

Correction in Letters Patent No. 327,288.

It is hereby certified that Letters Patent No. 327,288, granted September 29, 1885, upon the application of James W. Maloy, of Boston, Massachusetts, for an improvement in "Stone-Polishing Machines," was erroneously issued to "The American Marble Cutting Company;" that said Letters Patent should have been issued to *The American Marble Cutting Company of Maine, its principal place of business being in Boston, Massachusetts*; that this correction has been made in the records of the case in the Patent Office, and that the said Letters Patent should be read to conform thereto.

Signed, countersigned, and sealed this 3d day of August, A. D. 1886.

[SEAL.]

Countersigned:

R. B. VANCE,

*Acting Commissioner of Patents.*

H. L. MULDROW,

*Acting Secretary of the Interior.*