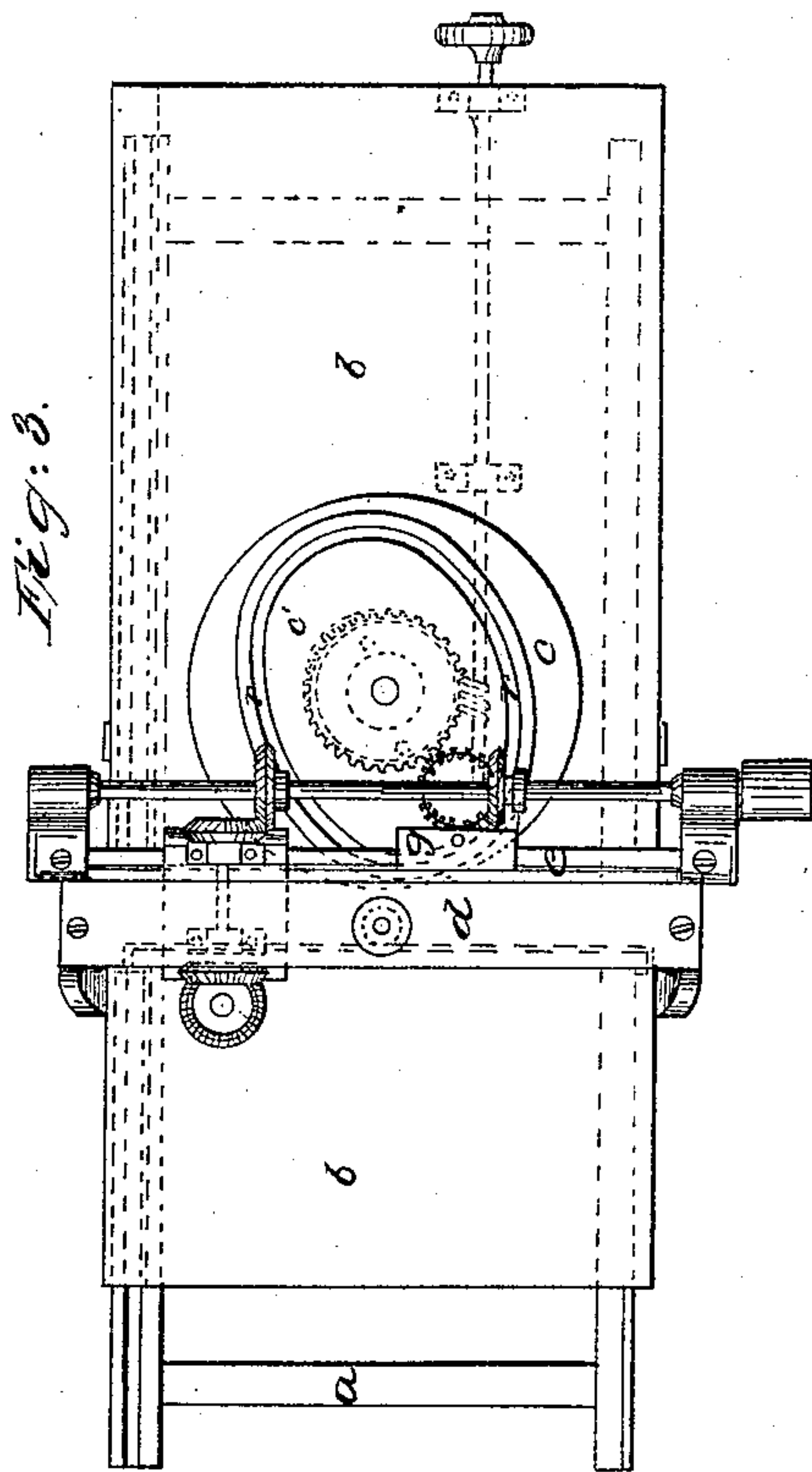
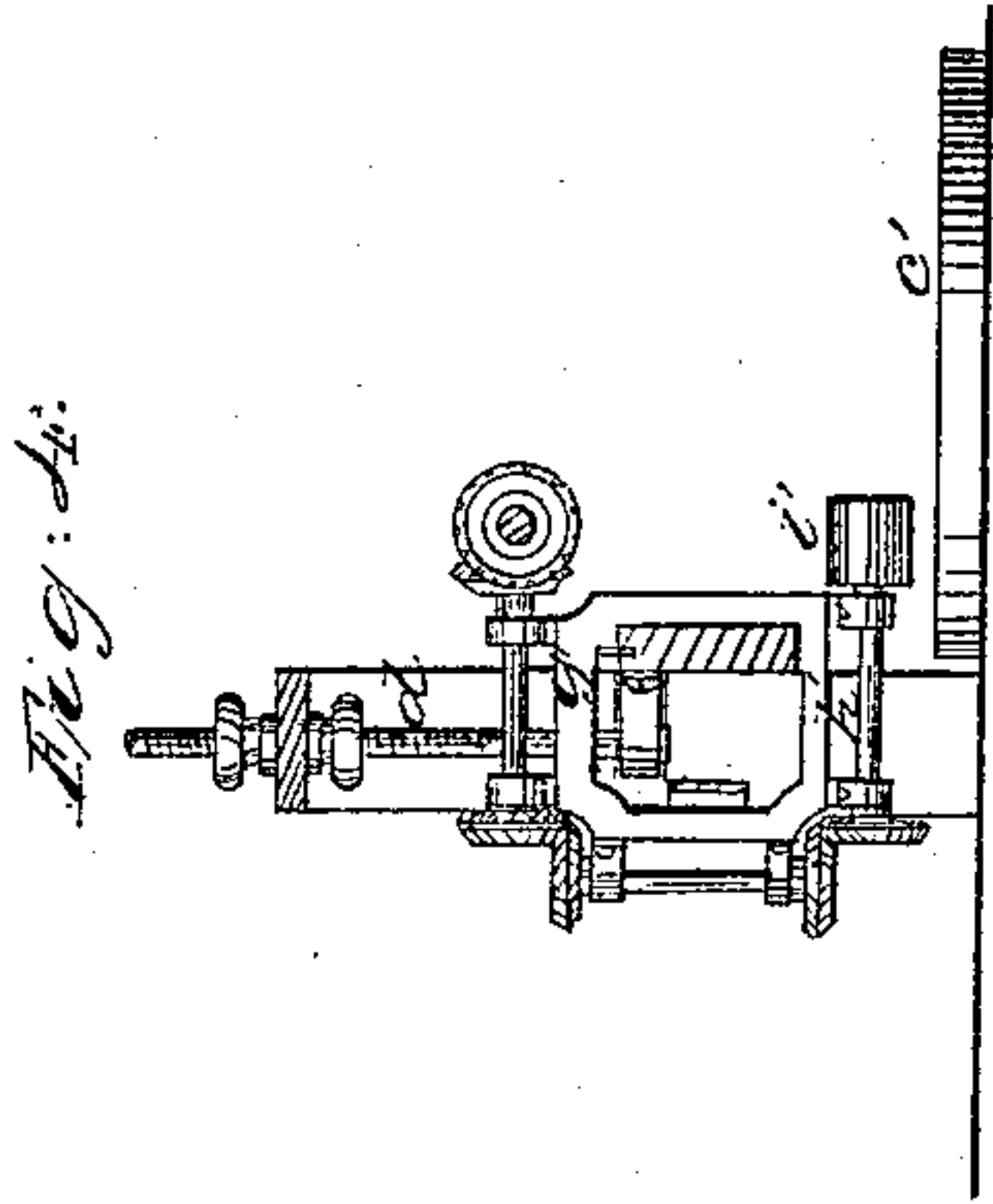


Patented Nov 5, 1867.



J. W. Maloy
By J. H. Adams
Atty

United States Patent Office.

JAMES W. MALOY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 70,449, dated November 5, 1867.

IMPROVED MACHINE FOR CUTTING STONE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES W. MALOY, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Machines for Cutting and Dressing Stone, Marble, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side elevation, with portions broken away to exhibit certain working parts.

Figure 2 is a plan view,

Figure 3 is an end elevation, and

Figure 4 is a detached portion of the machine more in detail.

Similar letters of reference indicate like parts in the several figures.

My invention relates to certain improvements in machines for cutting and dressing stone, &c., for which patents have been granted me, numbered 53,845 and 58,853, in which a sliding table, revolving platform, and rotating tool are shown.

My present invention consists in the employment of a movable or adjustable spindle, which carries the cutter or polishing-tool, so constructed and arranged as to cause the latter to be readily brought to bear upon all portions either of the edge or surface of the material which is being operated upon, the said spindle being capable of operating either in a vertical or horizontal position.

In connection with the above is a pointer, attached to a block or slide, which carries the spindle, and a grooved pattern-block or former, attached to the rotating portion of the table, by which means the tool is guided in its motions on the edges or in the convolutions on the surface of the material being operated upon.

Referring to the drawings, *a* represents the frame of the machine, supporting the sliding table *b*, which latter moves in ways or guides on the frame *a*. On the under side of the table is a rack, which engages with a toothed wheel, supported on a shaft that projects beyond one side of the frame, and has on its outer end a drum or pulley, by which motion is communicated to the table from any suitable power. At or near the central portion of the table is fitted a circular portion, *c*, which is supported in a corresponding opening in the table, and so as to rotate freely in the same, a rotating motion being imparted to the portion *c* by means of a worm-gear, operated in any suitable manner, all as fully described in the patents previously referred to. Upon the circular portion, *c*, of the table is secured a platform or former, *c'*, which supports the stone or material to be operated upon. Upon the upper surface of the former *c'*, at or near its edge, is a groove or recess, *r*, which may be of an oval, elliptical, or other irregular curved form, for the reception of a pointer or guiding-pin, *k*, attached to the head or block that carries the spindle, as hereinafter described. To the sides of the main frame is attached an upright frame, *d d'*, which supports a cross-head or guide, *e*, the latter having a free vertical movement in the said upright frame. To the centre of the cross-head *e* is attached a screw-rod, *e*, which passes through the upper portion or cross-piece *d'*, and is secured in place by means of screw-nuts *f f'*, by which the cross-head *e* may be readily adjusted at any required height, and securely held in position when adjusted. An equivalent means for adjusting and securing the cross-head *e* may be arranged at the sides, if desirable, instead of the centre of the upright frame. On the cross-head *e* is fitted, so as to slide freely, a block or head, *g*, which carries a spindle, *h*, having on its lower end a cutter or polishing-tool, *i*, and on its upper end a bevel-gear, which engages with a corresponding gear, *m*, upon a horizontal shaft, *l*, the latter being supported by arms extending from the ends of the cross-head *e*. The gear *m* is attached to a sleeve, which has a groove in one side of its central opening, which groove fits over a projecting flange or feather on the shaft, so as to secure a rotary motion of the gear, and at the same time admit of a longitudinal movement of the same on the shaft. By this means the cutter or finishing-tool is brought to bear upon the material as the pointer *p* is guided in the groove in the former *c'*. Instead of the system of gearing, as described, belting may be employed for communicating motion to the spindle from any suitable power. *k* represents a pointer, projecting downwards from the sliding block *g*, and fitting within the groove *r* in the supporting-bed or former *c'*, thus serving as a guide to the cutter or tool *i*. The pointer *k* may be made adjustable in relation to the cutting or finishing-tool, if desirable. *g'* represents a sliding block, carrying a horizontal spindle, *h'*, which is put in motion by means of a series of gears, as shown in fig. 4. The said spindle is provided with any proper tool for acting upon the surface of the

stone or other material, which tool may be of cylindrical form, and provided with cutting edges arranged either in a parallel or a spiral form. A portion of the block or head *g*, which carries the spindle, may be hinged to a sliding portion of the same, which latter is attached to the cross-head, so as to allow the spindle to be swung outwards, the several gears being so arranged as to insure the rotation of the spindle, and thus enlarge the capacity of motion of the rotating tool. The horizontal cutter may also be so arranged as to work around the shorter curves of an elliptic or other irregular curve. The spindle may also be arranged to rise and fall in its bearings, so as to adapt the tool to any irregularities in the surface of the material being operated upon. At the points of attachment of the bearings of the spindle on the block *g* may be interposed layers or pieces of India rubber, whereby a concussive effect will be produced in the operation of the cutting-tool upon the material.

I have described my invention as applied particularly to the cutting and dressing of stone, marble, &c.; it may, however, with slight modifications, be equally applicable to operations upon wood.

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

1. The combination of the spindle, which carries the cutting or finishing-tool, with the adjustable block *g*, substantially as and for the purpose described.

2. I claim the adjustable block *g*, carrying the spindle, whether the latter is vertical or horizontal, in combination with the movable cross-head *e*, as set forth.

3. I claim the pointer *k*, in combination with the adjustable block *g* and spindle *h*, substantially as and for the purpose specified.

4. I claim the former *c*, in combination with the cutting and polishing mechanism, substantially as set forth.

5. I claim the combination, with a sliding table, *b*, and rotating portion *c*, of a former, *c'*, as specified.

6. I claim the combination of the movable pointer *k* with the former *c'*, when operating substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES W. MALOY.

Witnesses:

J. H. ADAMS,

M. S. G. WILDE.