

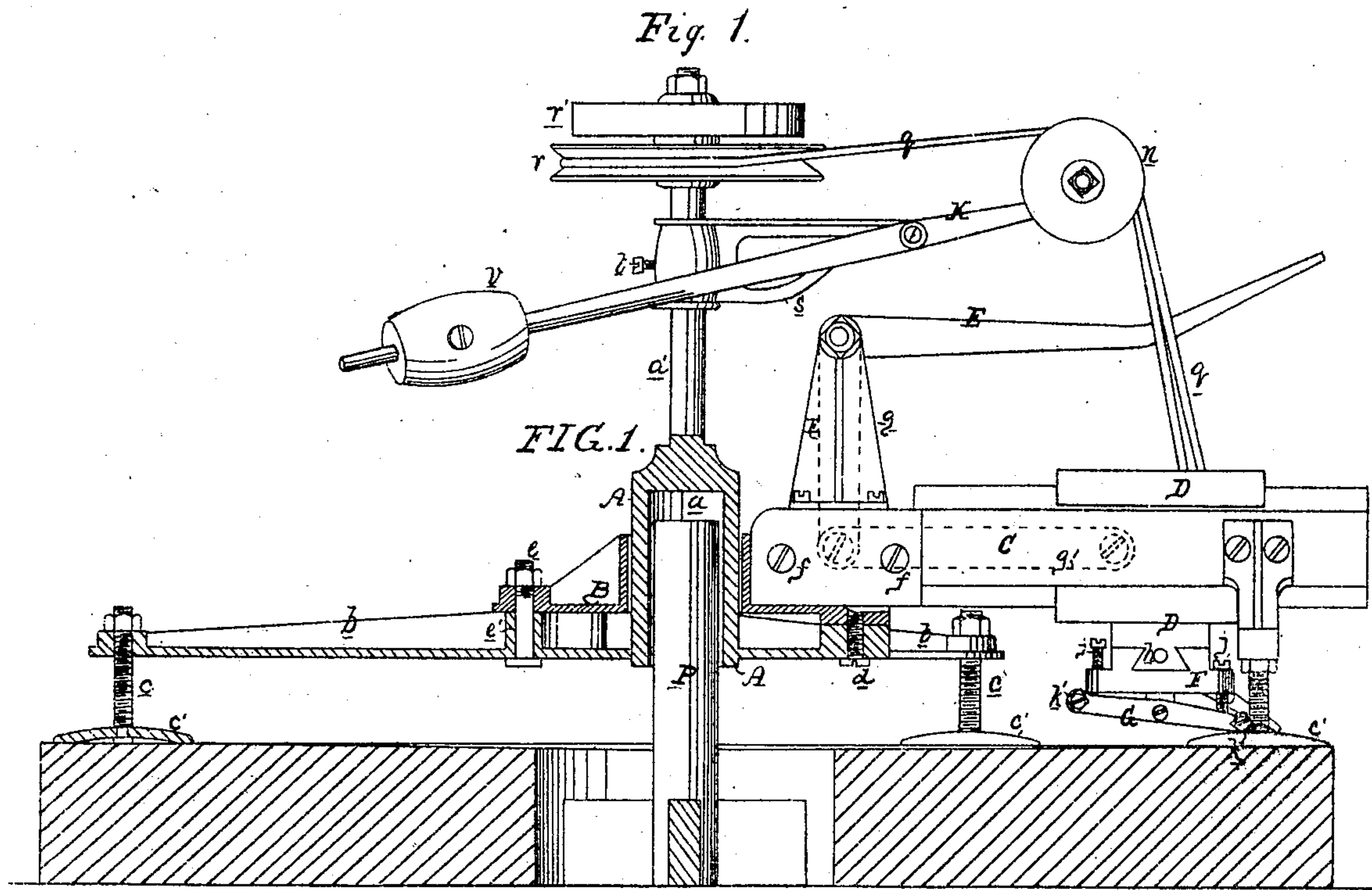
Sheet 1  
3 sheets

S. Golay.

## Dressing Millstones.

Nº 73524

*Patented Jan. 21, 1868.*



*Witnesses.*

Y<sup>rs</sup> Albert Steel  
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*Inventor.*

S. Golay,  
By this Act  
H. Howard

S. Golay.  
Dressing Millstones.  
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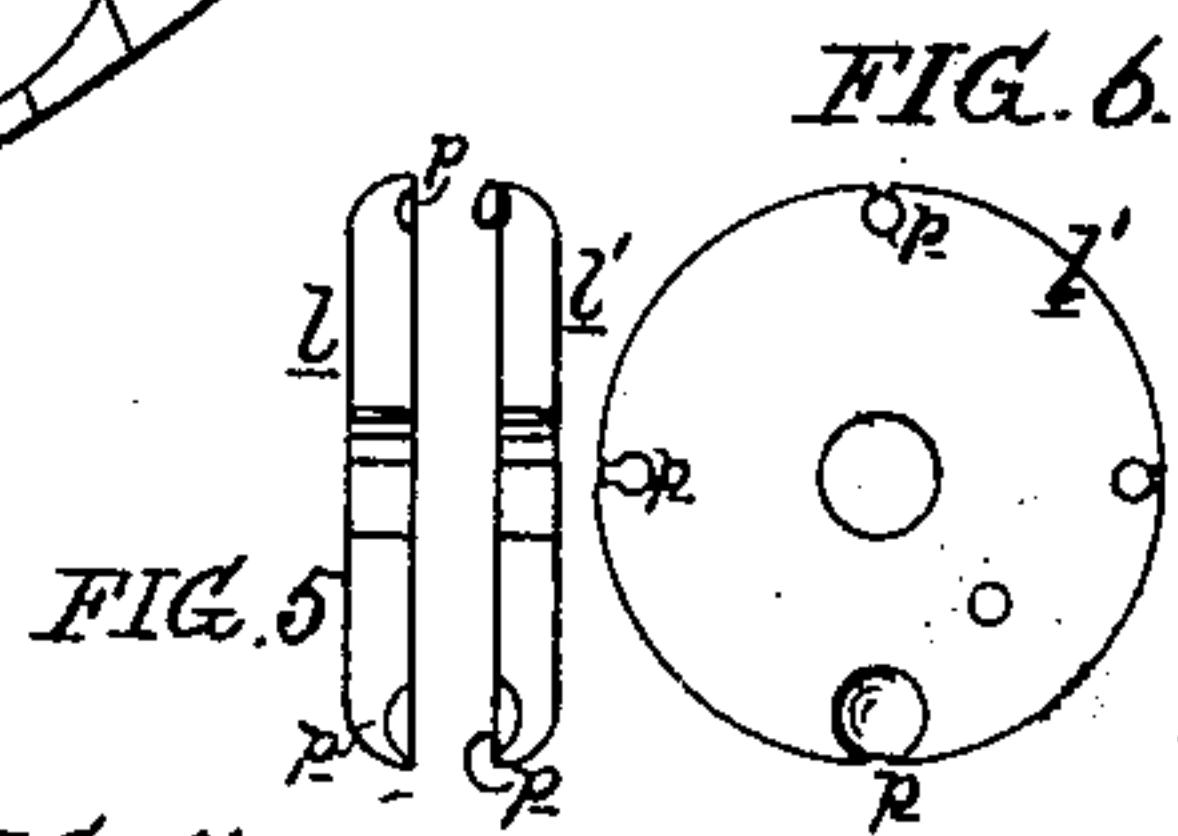
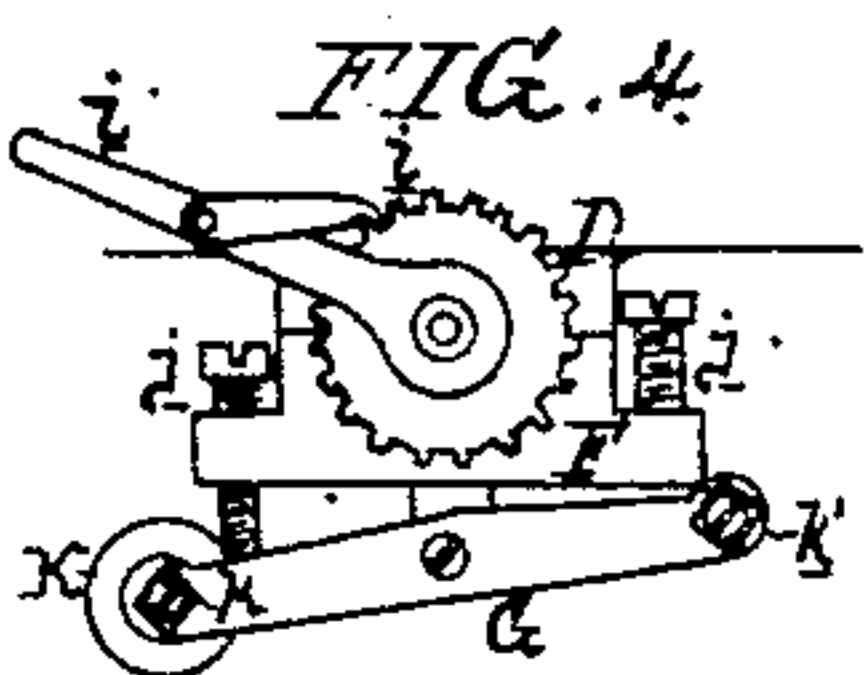
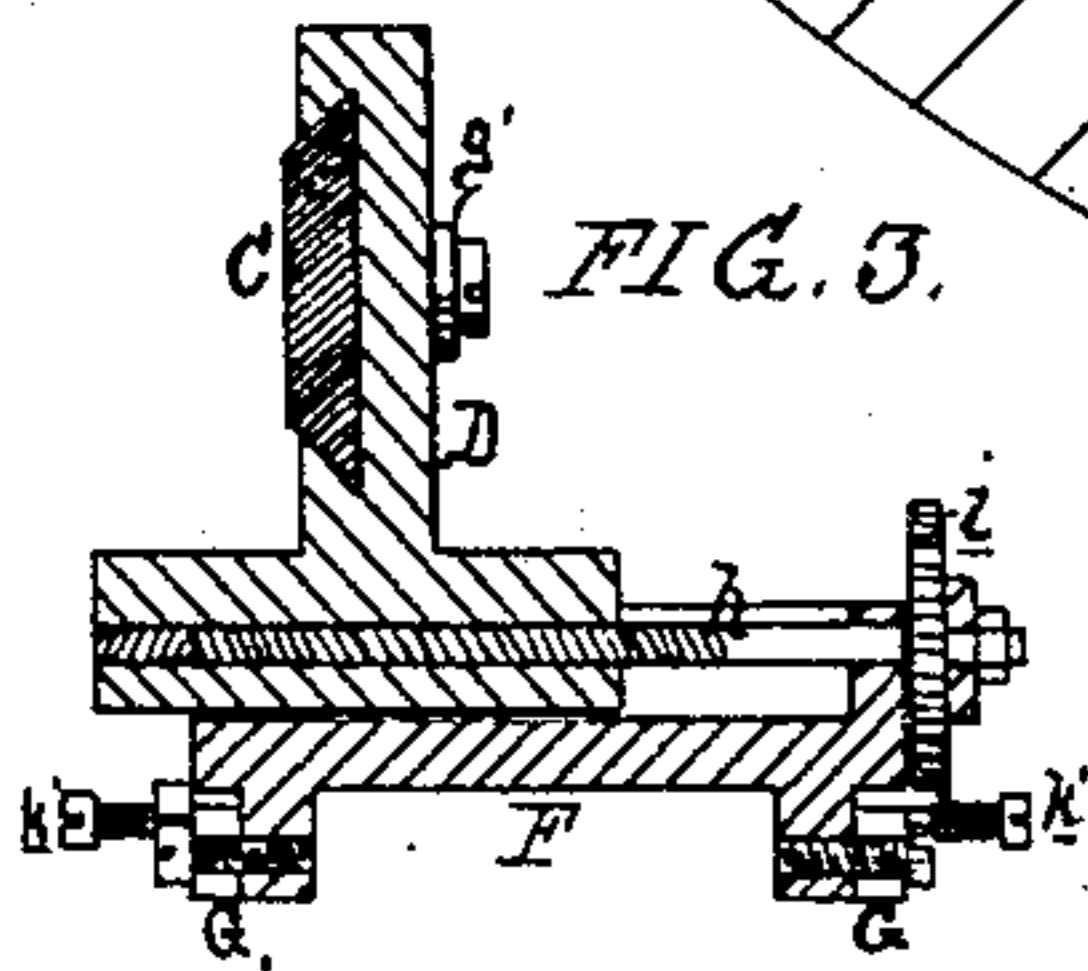
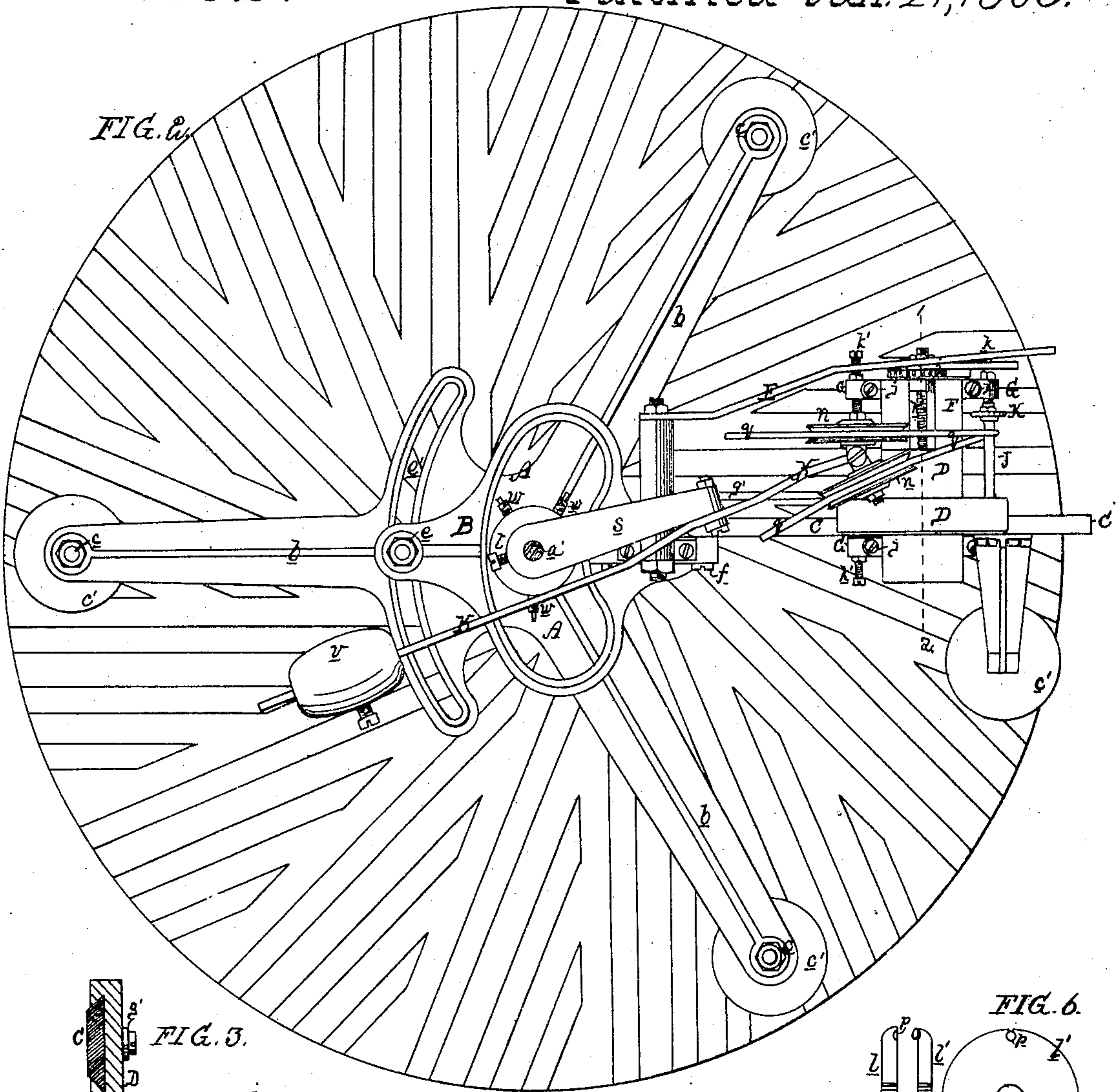
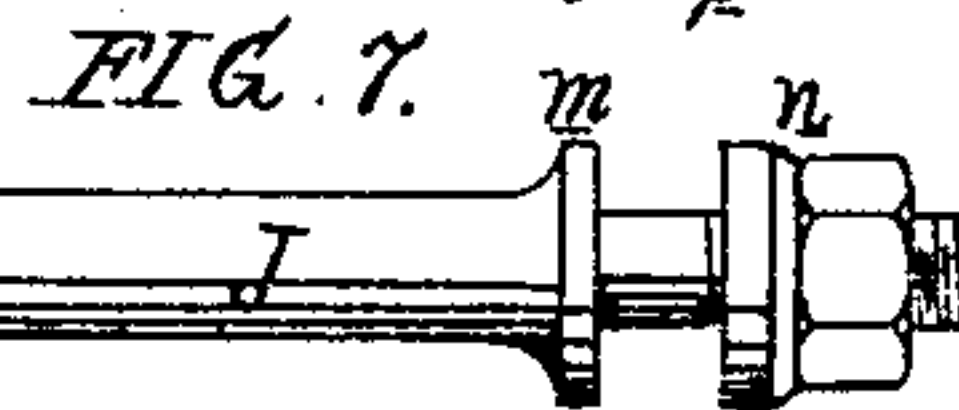


FIG. 6.



Witnesses.

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Dressing Millstones.

N<sup>o</sup> 73524

Patented Jan. 21, 1868.

Fig. 8

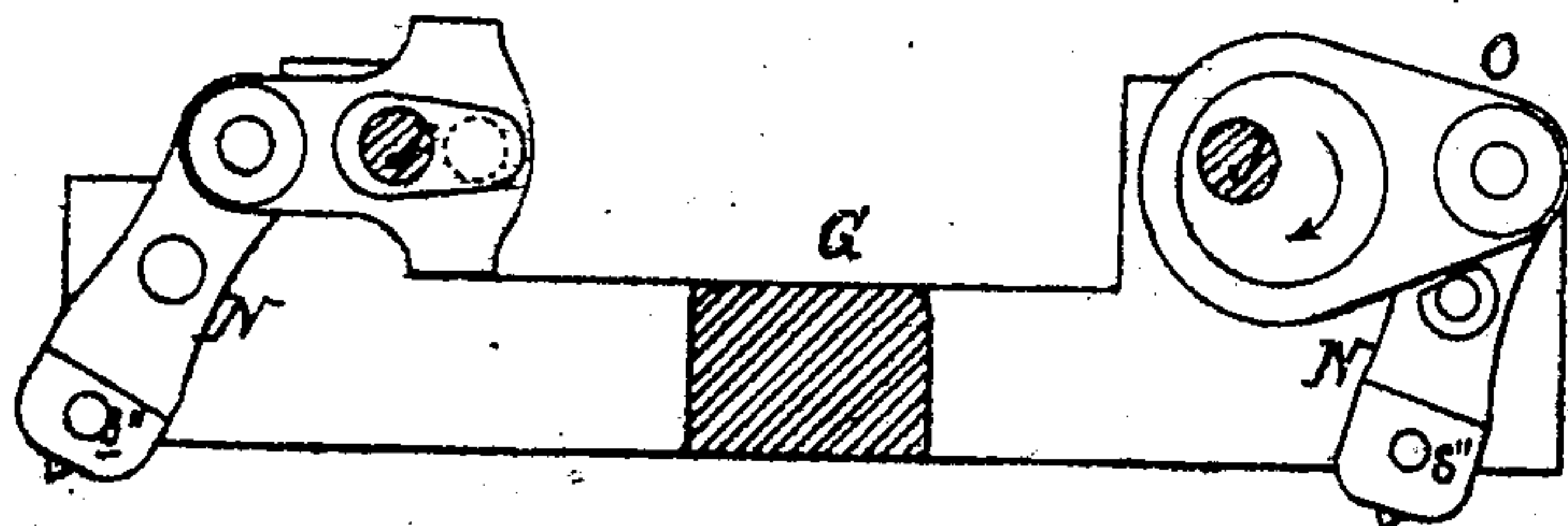
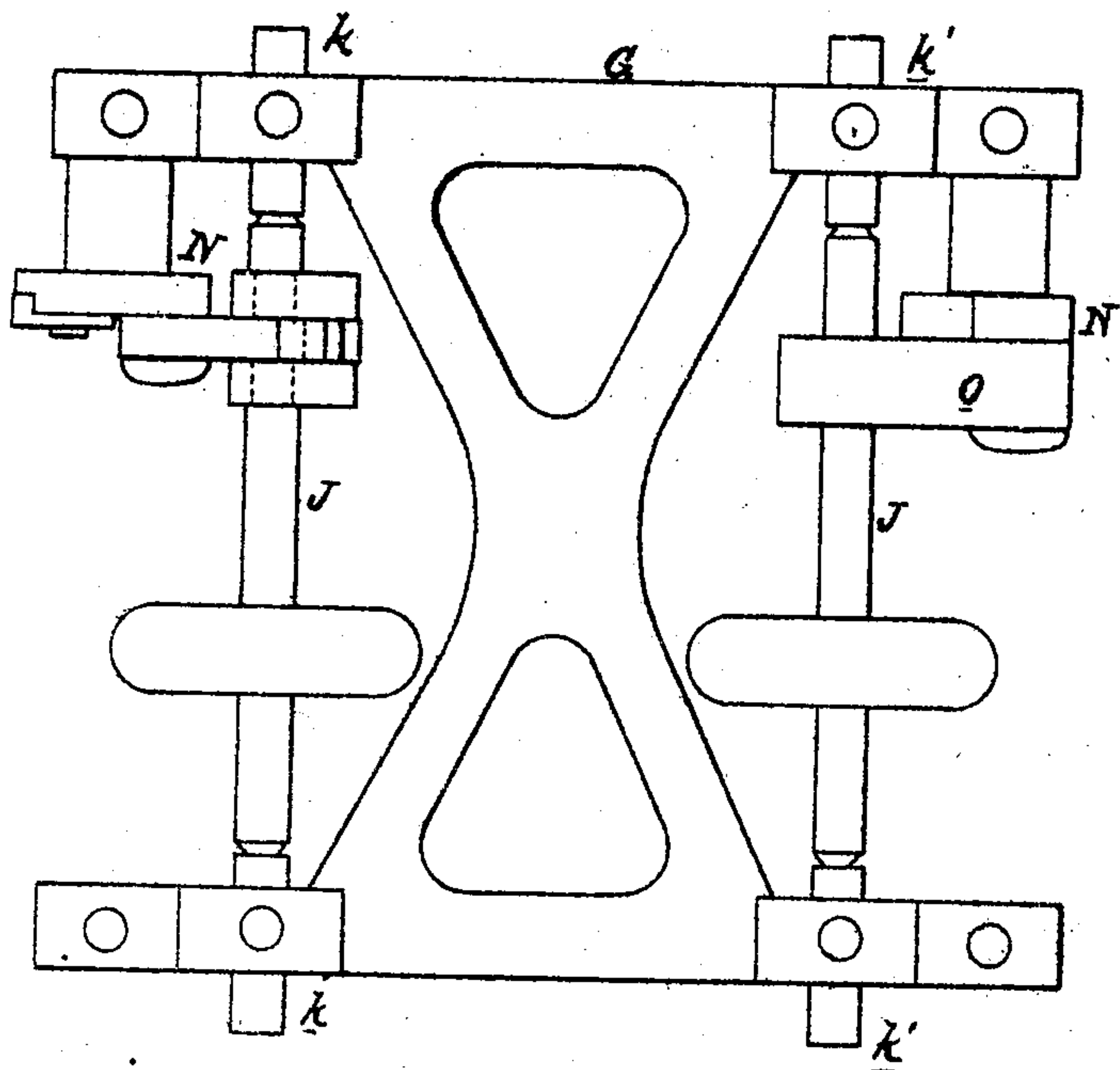


Fig. 9



Inventor.

H. B. Laro  
By his Att<sup>y</sup>  
H. H. Brown

Witnesses.

Wm. Steel  
John Parker



# United States Patent Office

SAMUEL GOLAY, OF L'ASSE-MILL, NEAR NOYON, SWITZERLAND.

*Letters Patent No. 73,524, dated January 21, 1868.*

## IMPROVEMENT IN DRESSING MILLSTONES.

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, SAMUEL GOLAY, of l'Asse-Mill, near Noyon, Canton of Vaud, Switzerland, have invented a Machine for Dressing Millstones; and I do hereby declare the following to be a full, clear, and exact description of the same.

The main feature of my invention consists of a cutting-tool, armed with a diamond or other hard stone, and so constructed and operating as to pick or cut grooves in the surface of a millstone, by a series of blows delivered in quick succession, other features of my invention consisting of mechanism, fully described hereafter, for facilitating the adjustment and operation of the said cutter.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is an elevation, partly in section, of my machine for dressing millstones.

Figure 2, a plan view of the same.

Figure 3, a transverse section of a portion of the machine on the line 1 2, fig. 2.

Figure 4, an end view of fig. 3; and

Figures 5, 6, and 7, detached views of the cutting-tool.

Similar letters refer to similar parts throughout the several views.

The frame A of the machine consists of a central hub, in which is formed a socket, *a*, and from which projects a vertical standard, *a'*, and radial arms *b*, provided at their outer ends with set-screws *c*, having, at their lower ends, circular plates *c'*, which rest upon the surface of the millstone to be dressed, so that, by adjusting the set-screws, the position of the frame A, in respect to the stone, may be easily regulated. A frame, B, is pivoted to the frame A, by a set-screw or bolt, *d*, and may be adjusted laterally on the same, and secured after adjustment by means of a bolt, *e*, which passes through a slot, *e'*, in the frame A, the said slot being in the arc of a circle, of which the bolt *d* is the centre. A dove-tailed guide-bar, C, is secured to the frame B by bolts or screws, *f*, which pass through slots in the frame, so that the bar, although it generally occupies the horizontal position shown in fig. 1, may be readily adjusted to an inclined position, for a purpose described hereafter. A slide, D, is adapted to the bar C, and this slide carries a plate, F, the movement of which can only be at right angles to that of the slide D, to which a reciprocating motion may be imparted by a bell-crank lever, E, hung to a standard, *g*, and connected to the said slide D by a link, *g'*. The sliding plate F may be operated by a screw-rod, *h*, ratchet-wheel *i*, and pawl and lever *i'*, as clearly shown in figs. 3 and 4. Two levers or tool-carriers, G, fig. 1, are hung to the under side of the sliding plate F, and are secured in the desired position by means of adjusting-screws *j*, which pass through projecting portions of the sliding plate, and bear upon the levers, one screw on each side of the pin to which the lever is hung. A tool-spindle, J, is carried on the points of the screws *k* of the two levers G, but can be readily removed from these screws, and adinated to the points of the screws *k'*.

The cutting-tool K consists of two metal disks, *l* and *l'*, figs. 5 and 6, hung to the spindle J, and confined between a shoulder, *m*, on the latter, and a nut and washer, *n*, fig. 7. In each of the disks, *l* and *l'*, are formed recesses, *p*, of different sizes, the recesses of the two disks forming sockets, each socket holding a piece of diamond, bort, or other hard stone, of a size best adapted to that of the socket, and in such a manner that one of the angles or points of the stone shall project through an opening at the circumferences of the disks, and beyond the same. The tool is caused to revolve by a band, *q*, passing from a pulley, *r*, which turns upon the standard *a'* of the frame A, and to which motion is communicated by a band passing from a pulley on any adjacent shaft, and round a pulley, *r'*.

An adjustable arm, *s*, is secured to the standard *a*, by a set-screw, *t*, fig. 1, and at the outer end of this arm is hung a lever, L, which can oscillate freely upon the arm, and has at one end two pulleys, *u u*, over which the band *q* passes, and at the other end a counterpoise, *v*, which continually tends to elevate the pulleys, thus keeping the band tight during all the movements of the slide-plate F and cutting-tool.



### Operation.

The machine is placed upon the stone to be dressed, and is levelled by means of the screws *e*, which so regulate its height that the cutter shall approximate to the position which it has to assume when in operation prior to subsequent adjustment by the set-screws *j*, fig. 4. A vertical spindle, or a wooden pivot, *P*, projecting from the stone, enters the socket *a* of the frame of the machine, and the latter is properly centred by its set-screws, *w*, fig. 2. Motion is communicated to the pulleys *r* and *r'*, and thence, by the band *q*, to the spindle *J* and cutting-tool, which is rapidly revolved. Then, by means of the lever *E*, the slide *D* is caused to traverse the guide-bar *C*, and a groove is consequently cut, or rather chipped, in the stone, for the action of the diamond is not of a scraping character, but is similar to that of the ordinary hand-hammer, as it cracks the stone by blows succeeding each other very rapidly, and causes a picking, or succession of shocks, which cut up the stone, and produce the desired effect. As soon as a furrow of the desired length has been made in the stone, the slide *D* is drawn back, and the ratchet *i* turned, until the sliding plate *F* and tool have been moved laterally to a slight extent. The movement of the slide is then recommenced, and a second furrow made, and the operation is continued.

It will be seen on reference to fig. 2 that the dress of the stone consists of a number of divisions, in which are formed three channels or grooves, and that the channels of each division are parallel to each other, and all communicate with one of the channels of the next division. After cutting the first channel, as above described, the operation is repeated upon the next parallel channel of the same division, until the sliding plate *F* has reached the end of its course. The machine is then turned, and the guide-bar *C* again made parallel with the channel by turning the frame *B* upon its pivot *d*, after which the sliding plate *F* is moved back to a proper position, and the cutting is recommenced and continued until all of the channels of the first division have been cut. The other divisions of the stone are treated in a similar manner, the machine and its several parts being properly adjusted for each. When it is desired to operate upon the central portion of the stone, the bolts *f* are loosened, and the guide-bar *C* slightly inclined, as before described, after which the tool-spindle *J* is mounted upon the screws *k'*, and properly adjusted.

The pivoting of the supporting-frame *B* is an important feature of my invention, for without it a much longer movement of the sliding plate *F* would be required in order to make all of the channels of one division of the dress.

As some stones are furrowed to the right, and others to the left, the machine is so constructed that the guide-bar *C* can be secured to either side of that portion of the frame *B* to which the bolts *f* attach it. The position of the slide can thus be reversed when necessary.

The dressing of millstones by hand is an operation requiring a skillful workman, and is necessarily slow and tedious, but by the employment of the above machine, which has been practically tested, an inexperienced person can cut a stone more rapidly, and as well as the most skillful dresser, working with the ordinary hand-hammers.

Although I prefer a rotating disk armed with diamonds or other hard stones, a good effect may be produced by a vibrating arm carrying a diamond at the end.

Without confining myself to the precise construction or arrangement of parts herein described,

I claim as my invention, and desire to secure by Letters Patent—

1. A cutting-tool, armed with a diamond or diamonds, or other hard stones, and so constructed and operating that while it is caused to traverse, it will cut or chip a furrow or groove in a millstone by a succession of blows, as set forth.

2. The disks *l* and *l'*, hung to a spindle, *J*, and having sockets *p* of different sizes, in which the cutting-stones are held when the disks are brought together, as described.

3. The cutting-tool *k*, constructed substantially as specified, in combination with the mechanism herein described, or any equivalent to the same, for imparting to the said tool a rotary, longitudinal, or lateral motion, as and for the purpose herein set forth.

4. The adjustable frame *A*, guided by the central spindle *P*, and carrying the adjustable plates *c'*, in combination with the pivoted frame *B*.

5. The reversible guide-bar *C*, so secured to the frame *B* by bolts *f*, that it may be inclined, for the purpose specified.

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

S. GOLAY.

Witnesses:

CHAS. H. UPTON,

S. M. P. UPTON.