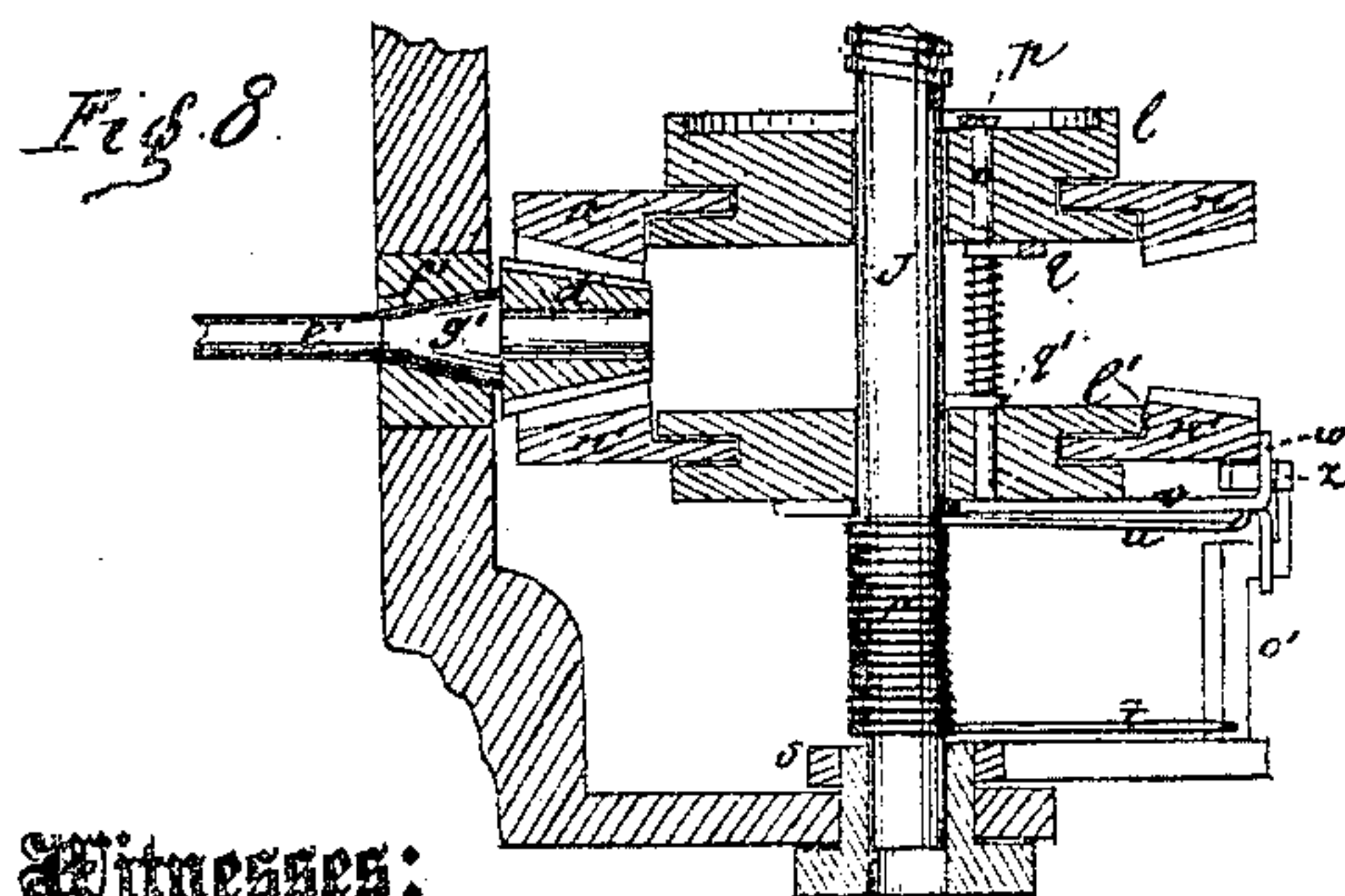
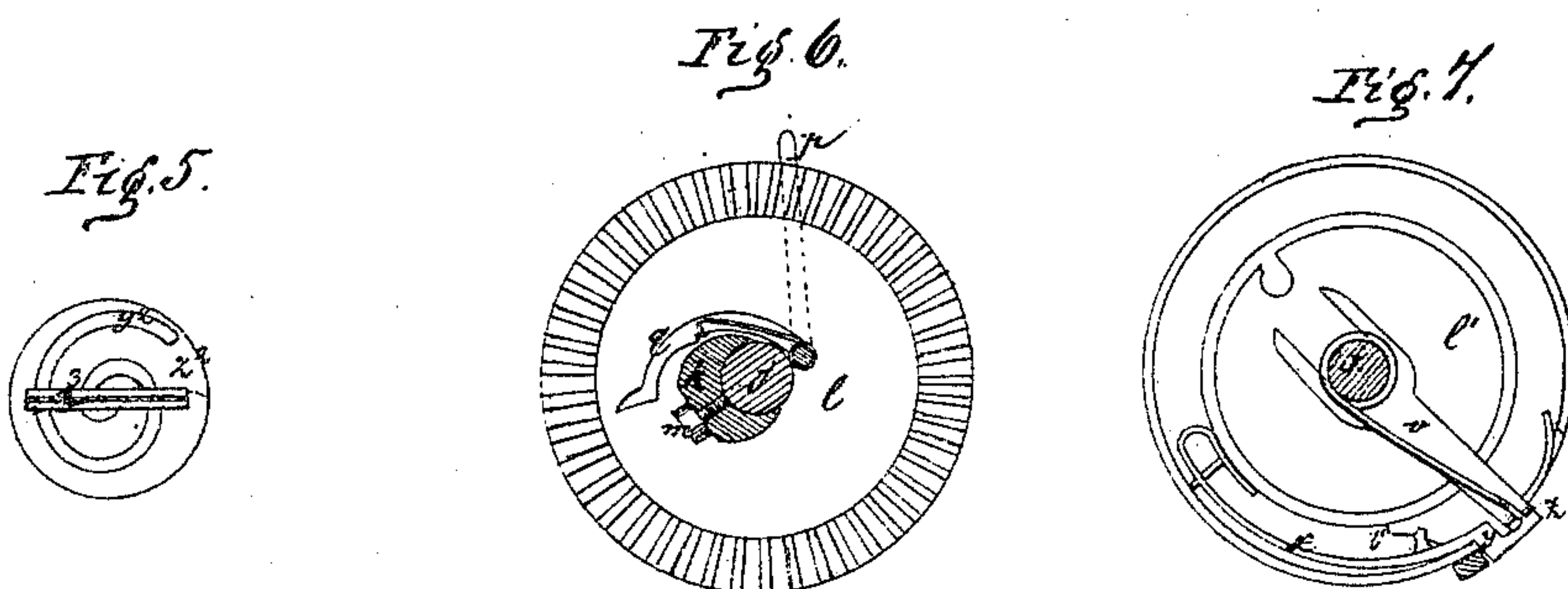
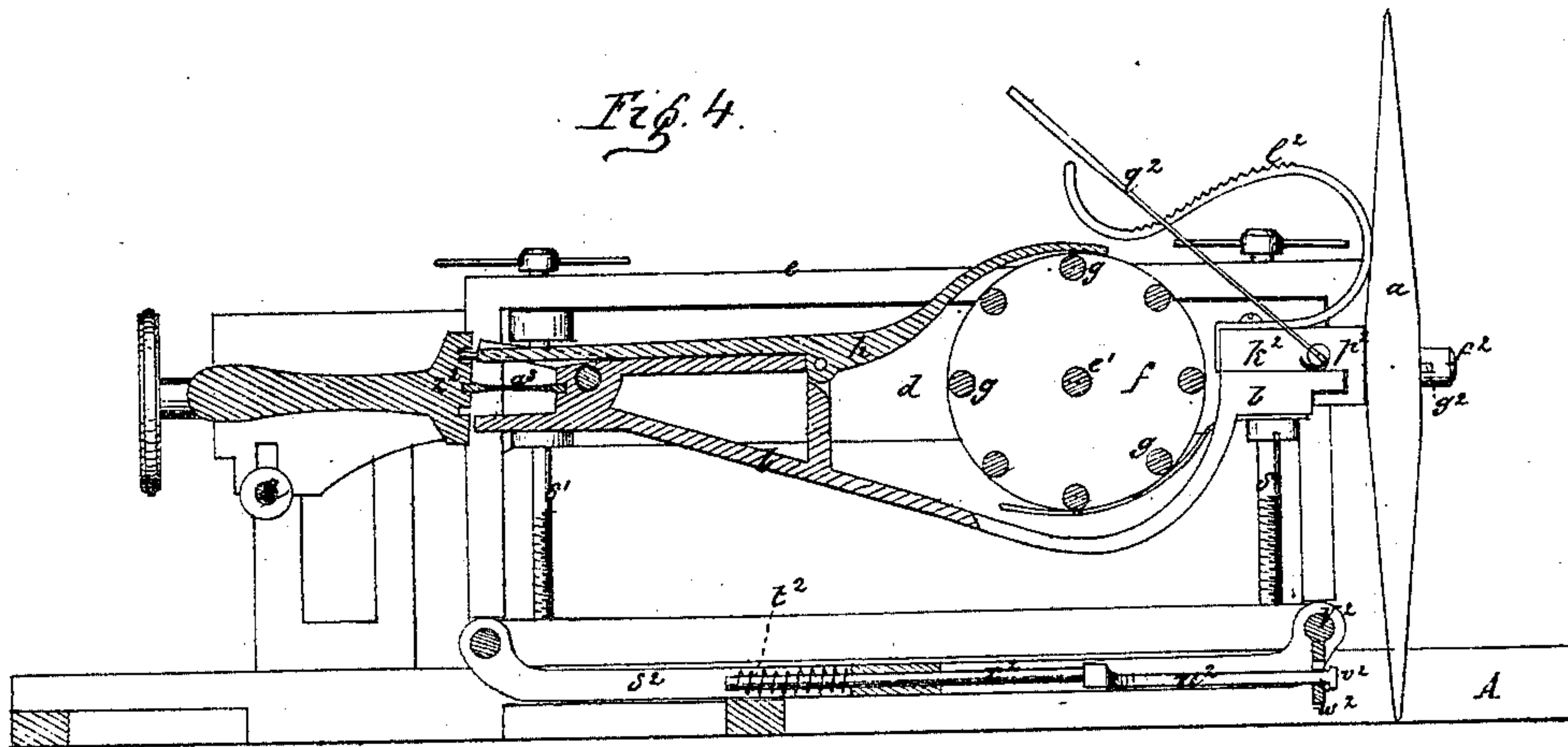


SAMUEL EAST.

Improvement in Machines for Dressing Millstones.

No. 114,425.

Patented May 2, 1871.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL EAST, OF MEMPHIS, MICHIGAN.

IMPROVEMENT IN MACHINES FOR DRESSING MILLSTONES.

Specification forming part of Letters Patent No. 114,425, dated May 2, 1871.

To all whom it may concern:

Be it known that I, SAMUEL EAST, of Memphis, in the county of St. Clair and State of Michigan, have invented a new and Improved Millstone-Dressing Machine; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a top view. Fig. 2 is a sectional elevation of the stationary driving-post with vertical sliding nut, through which the screw works. Fig. 3 is a sectional elevation of the mechanism for shifting and holding the pick. Fig. 4 is a vertical section through the whole machine crosswise of the barred cylinder. Fig. 5 is a side elevation of the grooved plate and spring at the end of the handle, by which the force of the blow and sweep of the pick are varied. Fig. 6 is an inside elevation of one of the bevel-gears on the screw. Fig. 7 is an outside elevation of the same; and Fig. 8 is a horizontal section through the bevel-gears.

This invention relates to a millstone-dressing machine, which operates a common mill-pick for cracking, facing, and furrowing, in which the pick is supported on a handle in such manner that it can be moved laterally to any desired point, said frame being made to slide by means of a screw, so that it can be moved forward or backward for the purpose of setting the pick in position to make fresh "cracks" in the "land" of the stone.

Referring to the drawing, *a*, Figs. 1, 3, and 4, is the pick. *b*, Figs. 1 and 4, is the handle that supports the pick. *c* is the bar on which the pick-handle slides laterally. *d* is the vertical sliding frame which sustains the bar *c*, screw *j*, gears *d*¹ *n* *n*¹, and cylinder with their various attachments. *e* is a horizontal sliding frame which supports the vertical sliding frame *d* by means of four corner-screws, *s*¹, which screws are used for the purpose of lowering the pick-handle and its connections, so as to insure the perpendicularity of the picks as they wear away.

The pick is operated vertically by a ribbed cylinder consisting of two disks, *f* *f*, connected by bars *g*. A hinged plate or arm, *h*, Figs. 1 and 4, extends from the grooved disk-plate *z*² to the bars *g*, on which it rests. The rear end of plate *h* terminates in a pin which

enters the worm-groove *y*² in disk-plate *z*², which is pivoted upon a flexible spring or web, *a*³, Fig. 4, on which it turns, varying the rear end of plate *h* as it is turned, which gives the front end a corresponding opposite motion, thereby regulating the sweep of pick and force of blow. As the cylinder is now rotated, by means of crank *i*, Fig. 1, the ribs or bars *g* pass successively under the plate *h*, which allows said plate to fall from one bar to another, and communicating thereby to the pick *a* its vertical motion, which is varied by the disk-plate *z*², which is pivoted on elastic web *a*³, Fig. 4, so as to allow the pick any desired range in length of stroke or force of blow which the operator may desire to suit the variable texture of the stone.

In Figs. 1, 6, 7, and 8, *l* *l*¹ are two disks, placed at a suitable interval apart on the screw *j*, concentrically therewith. *k* is a bar that connects the disks *l* *l*¹. *m* is a set-screw that fastens the bar *k* to the screw *j*. *n* *n*¹ are annular bevel-gears that are placed upon the disks *l* *l*¹, fitting their exteriors loosely.

o is a rod, parallel to the screw *j*, passing through the disks *l* *l*¹, having a handle, *p*, outside the disk *l*, by which to turn said rod, and having two pawls, *q* *q*¹, extending from it.

By placing the handle *p* in either of the outside notches made for it in the disk *l* the pawls *q* *q*¹ may be locked in any desired position—that is, the pawl *q* may be locked into engagement with the gear *n*, or the pawl *q*¹ with the gear *n*¹, or both pawls separate from both gears, by handle *p* being placed in the central notch.

Only one pawl can engage with its gear at a time; and when either pawl engages with its gear, that gear is thereby made fast to the screw *j* while the machine is being set forward or backward, as desired.

A spring, *r*, incloses the screw *j* between the disk *l*¹ and the nut *s*, that is placed near the end of the screw, which spring has one arm, *t*, that remains fast to nut arm or stop *o*¹, and another arm, *u*, that is made fast to the gear *n*¹, when the gear *n* or *n*¹ are either of them desired to connect by its pawl *q* or *q*¹ with the screw *j* during the operation of cracking.

The spring-arm *u* is not made directly fast to the gear *n*¹, but is indirectly through the medium of an arm, *v*, with which it is con-

which lugs passes a bolt, w^1 , to the ends of which bolt, outside the lugs v^1 , are pivoted the eccentric-boxes x^1 , that are formed at the extremities of the branches y^1 of a forked lever, z^1 .

On the yoke t^1 , and beneath the eccentric-boxes x^1 , is placed a link, a^2 , which is cast up at one end with a pin, c^2 , which is formed to enter an orifice formed in the web b^2 , that projects from side of track-frame A.

A set-screw provided with a handle, d^2 , is used for fastening the pin c^2 in its orifice, thereby securely fastening the machine at any desired draft with the center of the stone.

The eccentric-boxes x , when the lever z^1 is turned downward sufficiently far, serve to fasten the yoke t and link a^2 securely together, and thus prevent any sliding of the link or movement of the bed of the machine.

When the stone is of too little diameter to allow room enough between its spindle or center and the machine for the lever z^1 , the yoke t^1 can be turned so as to bring the lever on the other side of the spindle or center from the machine.

The pick a has a central transverse orifice, Fig. 3, with wing-chambers e^2 at each side of it, by means of which orifice and chambers the pick can be passed beyond the head of the bolt f^2 , with its wings $g^1 g^2$ extending at each side, which pins traverse the wing-chambers e^2 .

The pick-seat is a tube, h^2 , that incloses the bolt f^2 , which projects from the front end of a block, k^2 , which is pierced for the reception of the bolt f^2 , and is secured by a pivot, l^2 , upon the upper side of the front end of the handle b . The block k^2 is cast with a shoulder, m^2 . The pick is passed horizontally upon the bolt f^2 , and when beyond the pins g^2 it is turned into a vertical position.

The bolt f^2 is transversely grooved within the block k^2 , as shown in Fig. 3, and through this groove passes a pin, o^2 , on which is formed an eccentric at its center, where it crosses bolt f^2 within block k^2 .

Pin o^2 extends beyond the block k^2 at each side, and is slotted at each end, through which slots the forked end of lever q^2 passes, and, being bent backward and under, forms, on the outside ends of pin o^2 , the spring-eccentrics p^2 , which communicate an upward and binding movement to block k^2 when the lever q^2 is thrown backward over its ratchet l^2 , and at the same time the center eccentric on pin o^2 communicates a backward movement to bolt f^2 , whereupon pins g^2 are brought forcibly against the outside of the pick, binding it tightly on the shoulder of block k^2 . Thus, by one backward movement of the lever q^2 over its ratchet l^2 , the pick is securely fastened and unfastened with dispatch.

The object of block k^2 swinging on the pivot

l^2 is to secure to the edge of the pick, however imperfect in shape itself, an exact line with the rod c , upon which it is made to travel laterally in frame d .

In Figs. 1 and 4, r^2 is a bolt passing through a socket at the junction of the brace s^2 of frame e , said bolt being inclosed in a spring, t^2 , placed between the socket and its rear end, said bolt being attached at its front end to a plate, n^2 , whose upper side is made with care, parallel with the bottom of track-frame A.

Plate n^2 is provided at its front end with a rib, v^2 , that is placed on an exact parallel with rod c , Fig. 1.

The plate n^2 passes through an orifice in a web, w^2 , that extends downward from the cross-bar x^2 of frame e , which web serves as a support for the plate n^2 , which is intended for a pressure-gage, to be readily drawn out and used for the purpose of placing the edge of the pick upon to adjust it properly to a parallel with rod c , and also with the surface of the stone. After discharging its office the gage is allowed to be withdrawn by means of spring t^2 .

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

1. The combination of cylinder $f f g$, crank i , lever h^1 , spring n^1 , latch e^3 , sliding shaft e , taper friction $g^1 f^1$, and gears $n d^1 n^1$, as specified.
2. The combination of vertical sliding frame d , horizontal sliding frame e , track-frame A, screws s^1 , stationary driving-post b^3 , screw j , and nut k , as described.
3. The combination of screw j , disks $l l^1$, gears $d^1 n n^1$, connecting-bar k , set-screw m , pawls $q q^1$, bar o , with handle p , as set forth.
4. The combination of screw j , disk l^1 , gear n^1 , dog x , tooth z , arm v , spring-arm u , spring r , and stops $a^1 o^1$, as explained.
5. The combination of yoke t^1 , lever z^1 , eccentric x^1 , link a^2 , pin c^2 , and web b^2 , as specified.
6. The combination of block k^2 , bolt f^2 , pivot l^2 , pin o^2 , with center eccentric, spring-eccentrics p^2 , lever q^2 , ratchet l^2 , rod c , and pick-handle b , as described.
7. The combination of braces s^2 , bolt r^2 , spring t^2 , plate n^2 , rib v^2 , and web w^2 , as set forth.
8. The combination of pick-handle b , plate h , web a^3 , disk z^2 , and worm-groove y^2 , as explained.
9. The winged orifice in pick a , in combination with the bolt f^2 and pin g^2 , substantially as described.

SAMUEL EAST.

Witnesses:

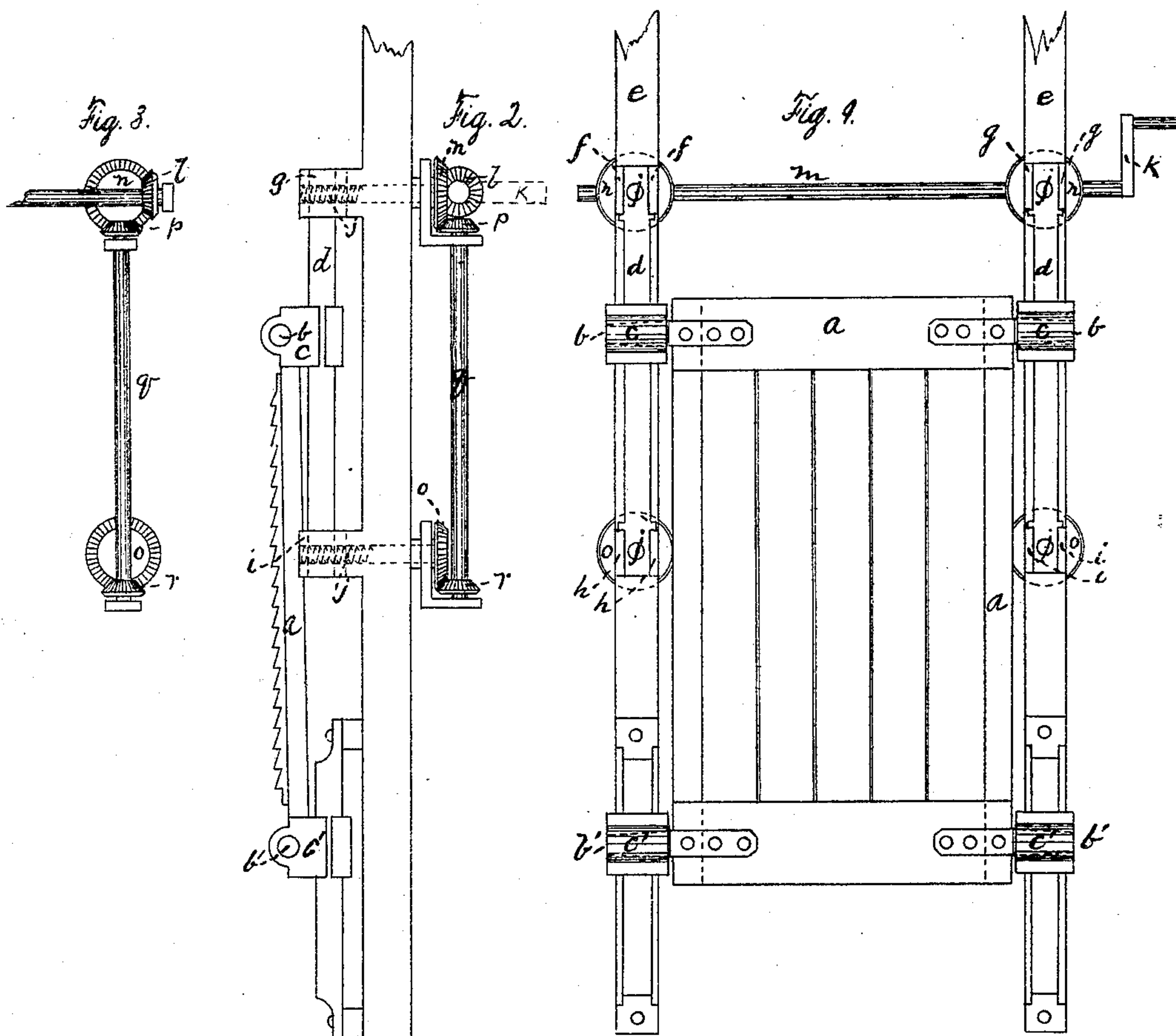
SOLON C. KEMON,

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Improvement in Saw-Mills.

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