(No Model.)

4 Sheets—Sheet 1.

# J. S. MOSELEY.

## SAW FILING MACHINE.

No. 431,070. Patented July 1, 1890.

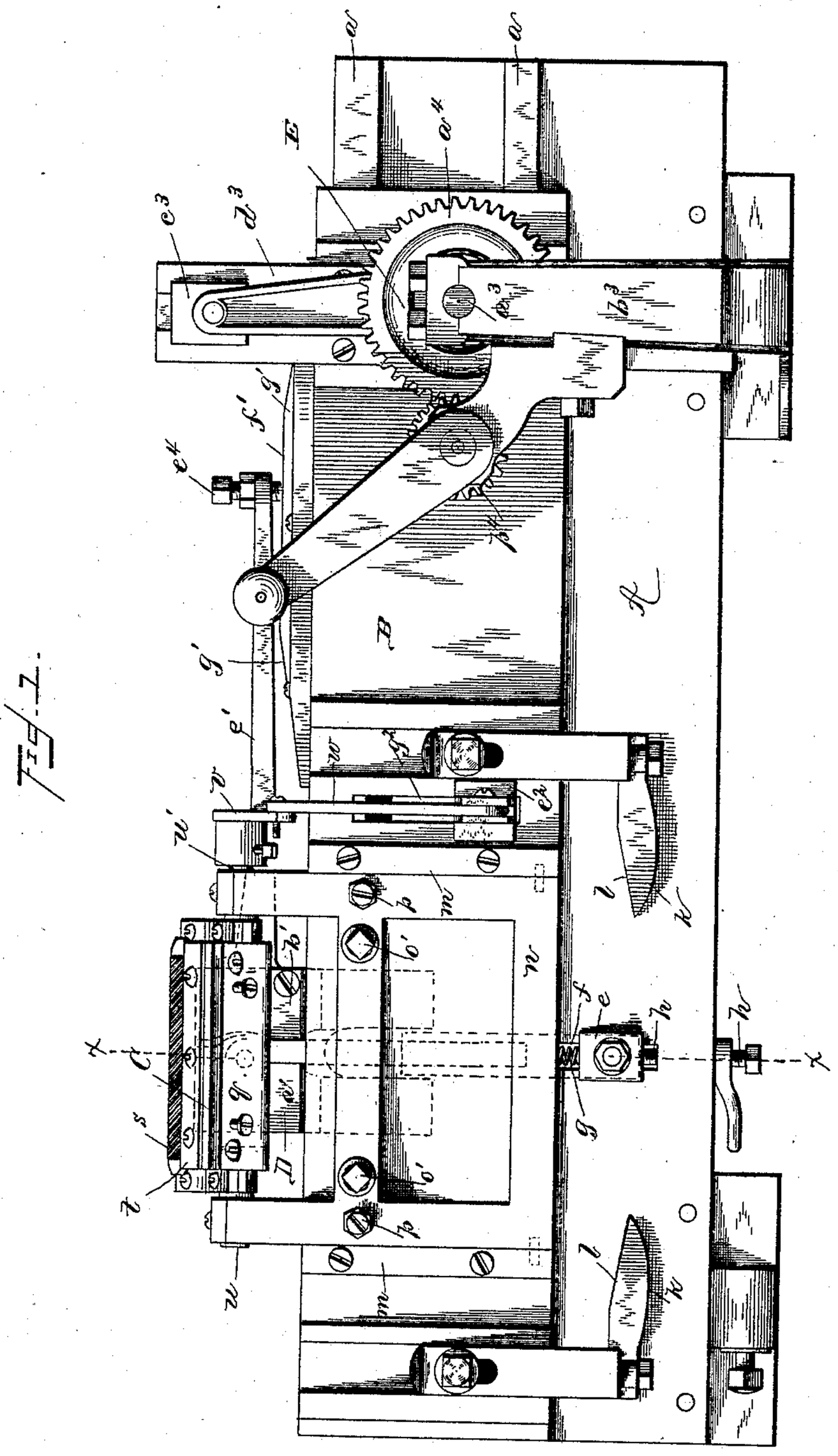

Fig. 1.

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(No Model.) 4 Sheets—Sheet 2.

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Fig. 6.

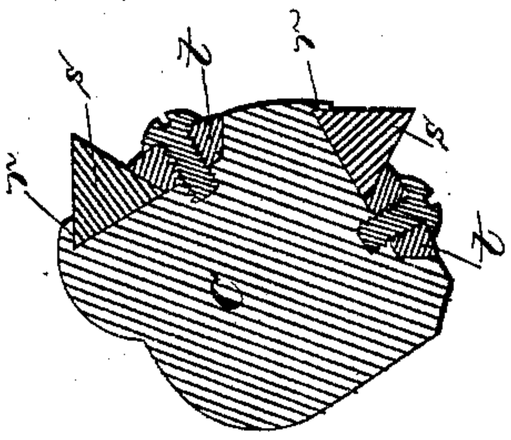


Fig. 7.

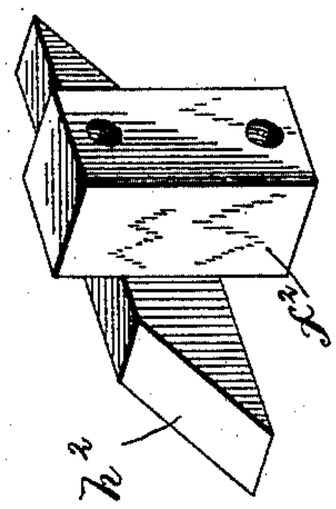
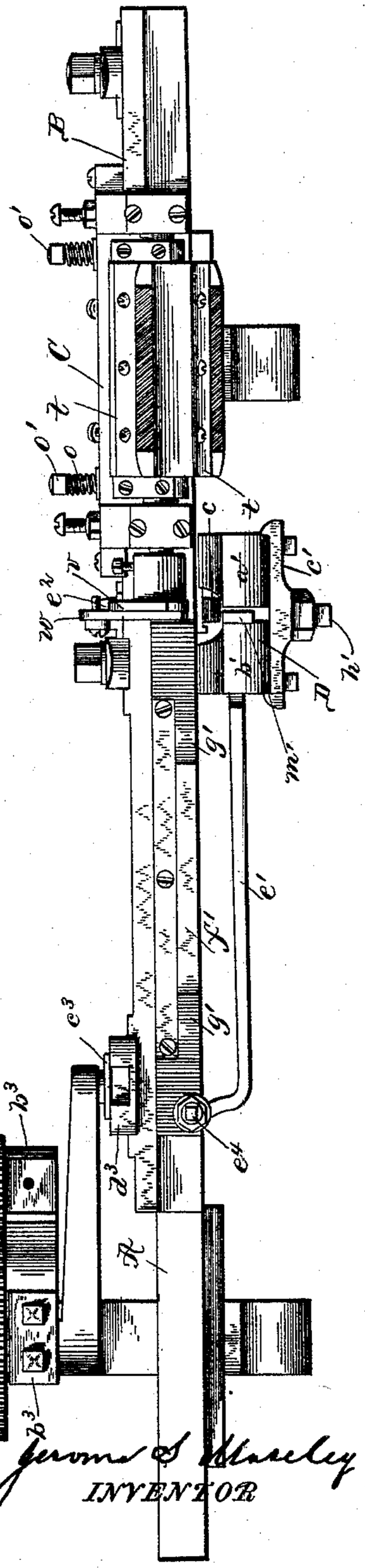


Fig. 2.



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4 Sheets—Sheet 3.

# J. S. MOSELEY.

## SAW FILING MACHINE.

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Fig. 3.

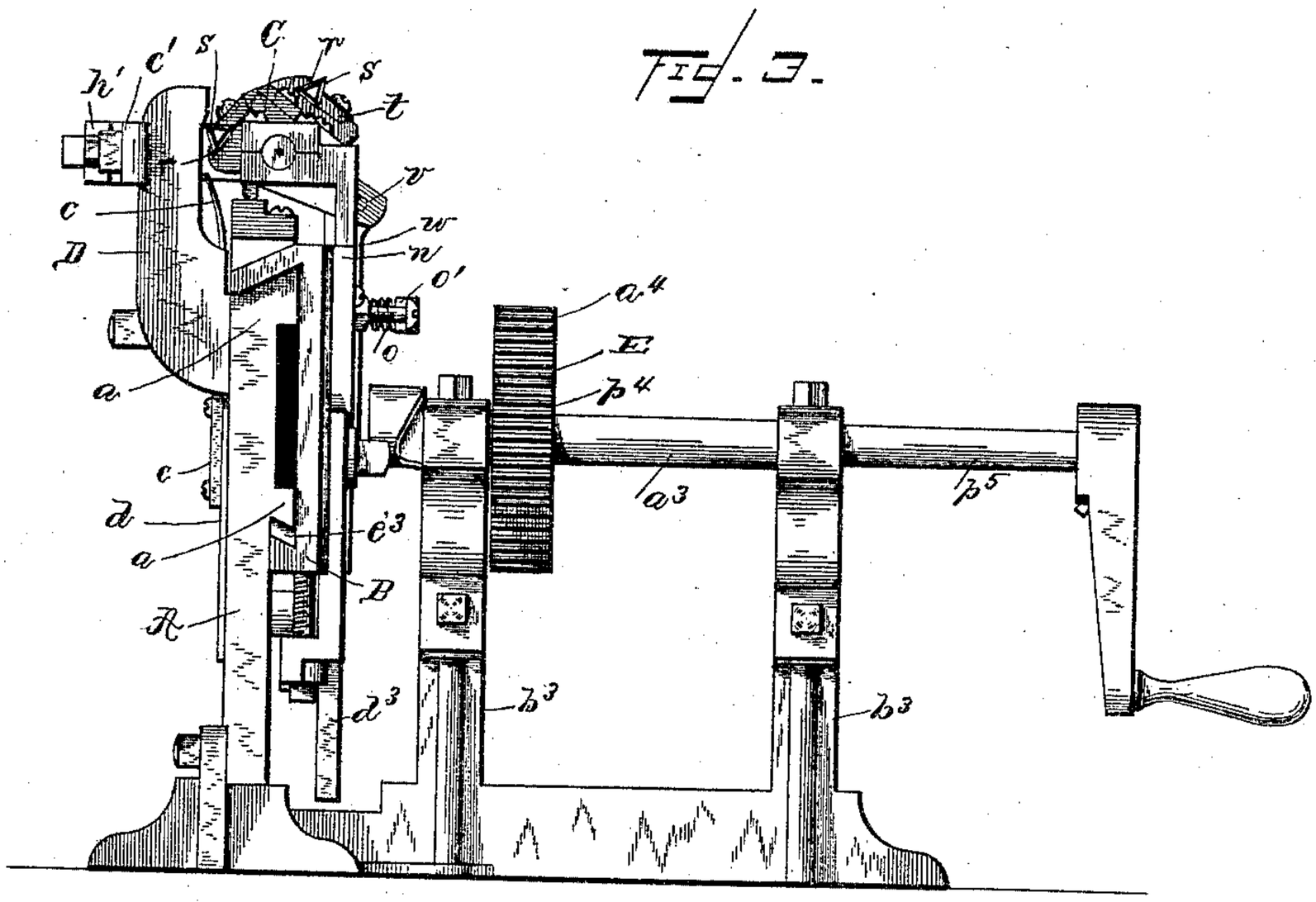
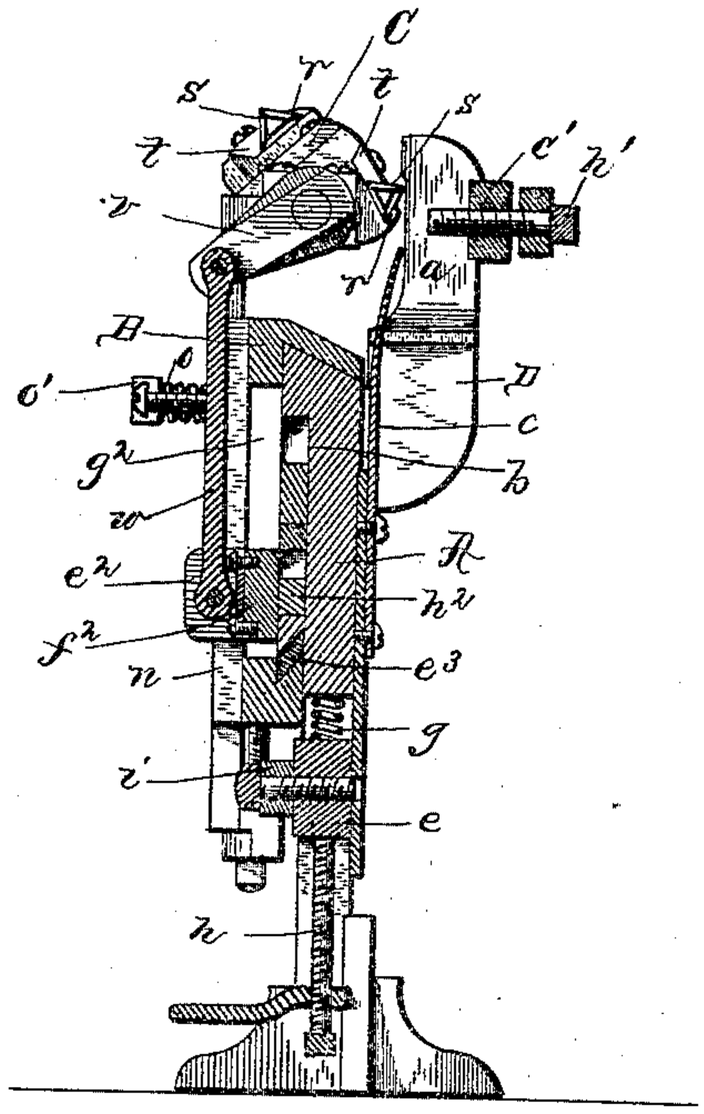



Fig. 4.

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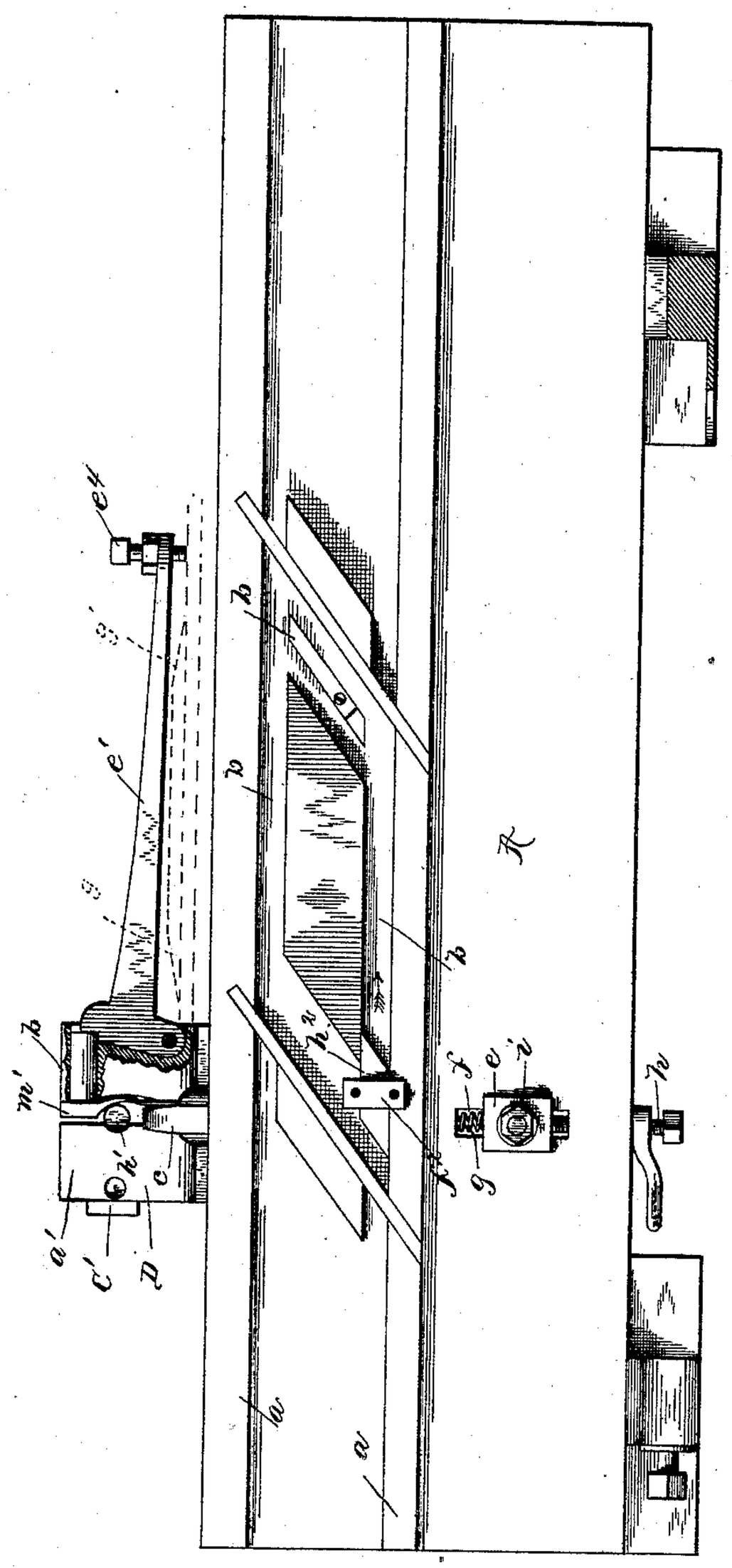
4 Sheets—Sheet 4.

# J. S. MOSELEY.

## SAW FILING MACHINE.

No. 431,070. Patented July 1, 1890.

Fig. 5.




WITNESSES
F. L. Ourand
Marcus B. Byng

Jerome S. Moseley
INVENTOR

# UNITED STATES PATENT OFFICE.

JEROME S. MOSELEY, OF SYRACUSE, NEW YORK.

## SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 431,070, dated July 1, 1890.

Application filed March 29, 1889. Renewed May 19, 1890. Serial No. 352,369. (No model.)

*To all whom it may concern:*

Be it known that I, JEROME S. MOSELEY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Saw-Filing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide an improved machine for sharpening saws, especially band-saws, and that too without unshipping them.

My improved machine comprises mechanism for clamping the saw, mechanism for advancing or feeding it tooth by tooth, and mechanism for reciprocating the file across a tooth to sharpen it, all of which are operated from a single driving-wheel, as will be hereinafter particularly described, those parts and combinations which I deem to be new being claimed in the several claims at the end of the specification.

In the accompanying drawings, Figure 1 is a view in front elevation of a machine embodying my invention; Fig. 2, a top plan view; Fig. 3, an end elevation looking from left to right, Fig. 1; Fig. 4, a transverse vertical section taken on a plane indicated by the line X X in Fig. 1; Fig. 5, a front view of the main frame with the reciprocating carriage removed; Fig. 6, a sectional view of the file holder or stock; and Fig. 7 a perspective view of a block which slides in a groove in the main frame or plate.

The letter A designates the main frame; B, the reciprocating file-carriage, and C the file holder or stock.

D is the saw-clamping frame, and E the driving mechanism.

The frame A consists of a rectangular vertically-arranged plate provided with suitable means for supporting it. On the face of the plate is formed the dovetailed guide rails or tracks *a*, on which the carriage B is secured, so that it can be reciprocated thereon. The face of this frame is also provided with a groove *b*, rhomboidal in outline, the function of which will be explained farther on.

On the rear side of the frame is secured or formed the saw-clamping frame D, which consists of two separated parts *a' b'* and horizontal cross-piece *c'*, bolted to said parts *a' b'*, and having an adjustable set-screw *h'*, the end of which bears upon the rear edge of the saw to keep the same in proper position vertically and against the saw-advancing device.

Between the parts *a' b'*, and on the part *b'*, is secured a spring-clamp *m'*, operated by the short end of the lever *e'*, which is pivoted in the part *b'* and operated at its long end by a horizontal surface *f'* on the reciprocating carriage to cause the spring *m'* to clamp the saw between itself and the part *a'* while the file is passing over a tooth. The surface *f'* is beveled off at either end, as seen at *g' g'*, so that the spring *m'* may be allowed to release the saw, which it does by its own elasticity. The longer end of the lever *e'* is provided with an adjustable screw $e^4$, by means of which the clamp may be adapted to saws of different thicknesses.

The saw feeding or advancing device consists of a flexible finger *c*, curved at its upper end and secured to a plate *d*, which in turn is secured to or forms a part of a block *e*, sliding in a slot *f* in the main frame. A spring *g* between the end of the slot *f* and block *e* tends to hold the block normally down against the end of an adjustable screw *h*, by means of which the extent of movement of the finger can be varied to adapt the machine to saws of different sizes. The block *e* is provided with a stud *i*, which projects beyond the face of the main frame. Feet *k k*, having inclined upper faces *l l*, are adjustably secured to the reciprocating carriage, so that at the end of each movement of the carriage the inclined faces come into contact with the stud *i* and elevate the block a distance equal to the distance between two saw-teeth. It will thus be seen that the spring *g* and the feet give to the finger *c* a reciprocating motion, which advances the saw tooth by tooth as it is sharpened.

The reciprocating carriage B is constructed upon its rear side so as to embrace and slide upon the ways *a* on the main frame. On its front side, or that which is seen in Fig. 1, is pivoted at its lower end between two bars or beads *m* a frame *n*, having suitable bearings at its upper end for the shaft or bearing-studs

of a rocking file holder or stock C. This frame is pressed with a yielding pressure toward the face of the carriage by means of springs *o o* on headed bolts *o' o'*, which pass through said frame and into the carriage. Adjustable set-screws *p p*, passing through the file-holder frame, determine the position which the said frame shall maintain with respect to the reciprocating carriage, and consequently the extent to which the file shall project between the teeth.

The file holder or stock C consists of a body portion *q*, which may be of cylindric or prismatic form, provided on its surface with grooves *r r* of proper configuration and size to receive the files *s s*, which are arranged and secured longitudinally therein, as shown in the drawings. It is desirable that the grooves to receive the files be of greater width than the files, so that fastening-plates *t t*, with attaching-screws, may be employed to secure the files firmly in place. This construction enables me to employ files of different sizes and shapes, as the size or configuration of the teeth may require.

As before stated, the file-holder has a shaft or studs lettered *u u'*, the latter of which projects beyond its bearing and has attached thereto a short crank *v*. A rod *w* connects the end of this crank with the ears of a block $e^2$, attached to a block $f^2$, which slides vertically in a slot $g^2$ in the reciprocating carriage.

Formed on the inner side of the block $f^2$, and at right angles thereto, is another part or block $h^2$, of rhomboidal parallelopiped form, to fit and slide in the groove *b* on the face of the main frame. When the carriage is reciprocated, the walls of this groove *b* act on the block in such a manner as to cause it to reciprocate vertically in the slot $g^2$ in the carriage, thereby imparting a rocking motion to the file-holder. This operation may be briefly described as follows: Suppose the carriage is moving from left to right and the part $h^2$ is in the lower horizontal part of the groove, as seen in Fig. 5. Now when the part $h^2$ comes into contact with the inclined part of the slot continued movement of the carriage will cause the block to rise and the file-holder will be given partial rotation on its axis to present another file to the teeth. When the part has reached the upper right-hand corner of the groove, the movement of the carriage is reversed and the part $h^2$ passes along the upper horizontal part of the groove. During the movement of the file-holder in the horizontal portions of the groove it, the file holder, is given no motion on its axis; but a file is simply carried across a tooth to sharpen the latter. Now when the part $h^2$ or block reaches the inclined portion at the left-hand part of the groove the walls of said groove act on the block, causing it to make a downward movement in the slot, which imparts a partial rotation to the file-holder equal to and in a direction just the reverse of that it had when the block $h^2$ was at the inclined part of the opposite end of the groove, and so the operation is repeated *ad libitum*. The groove *b* is provided with a flat spring whose free end is curved outward, so that the block $h^2$ cannot be moved or fall backward in the groove when it reaches the upper right-hand corner thereof. In other words, this spring prevents a reverse operation of the machine.

The mechanism for reciprocating the carriage may consist of a driving gear-wheel $a^4$, whose shaft $a^3$, which extends at right angles to the plate A, is borne upon suitable standards $b^3$, forming a part of the main frame. A crank having a block $c^3$ to slide in a grooved cross-bar $d^3$, arranged on the carriage, on being rotated by the driving-wheel imparts a reciprocating motion to the carriage. Motion may be imparted to the drive-wheel by the revolution of an engaging-pinion $p^4$, whose shaft $p^5$ is provided with a handled crank for performing that operation.

To enable the removal of the carriage from the main frame, a bar $e^3$ (see Figs. 3 and 4) fits in and fills a space between a dovetailed guide or way and the corresponding flange on the carriage. This bar is held in place on the flange by means of set-screws, on the removal of which the bar may be pulled out and the carriage taken from the frame.

The operation, which can well be gathered from what has already been said, may be briefly summed up as follows: The cross-piece *c'* is removed by taking out its fastening-screws and the machine placed so that the saw will pass vertically between the clamping-spring and the part or jaw *a'*. The cross-piece is then replaced and the set-screw *h'* adjusted. Power is now applied to move the carriage and the surface *f'* acts on the lever, causing the spring *m'* to clamp the saw firmly. Further movement of the carriage causes a file to act on a tooth to sharpen it. When the carriage approaches the end of its movement and the file-holder has passed the saw, the said holder is given a partial rotation on its axis, and the other file is turned into position to act when the carriage moves in the opposite direction. In the meantime a foot *k* has lifted the stud *i*, and consequently the finger *c*, and the saw advanced the distance of one tooth and a new one thus placed in position to be sharpened, and so the operation is repeated until the saw is completely sharpened.

With my machine it will be plain that the files may be arranged in the holder or stock so that the most effective surface can be brought to act upon the saw-teeth to produce the desired feather-edge.

It is hardly necessary to state that I do not limit myself to the particular form of parts shown in the drawings, because they may be somewhat modified without departing from the scope of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a saw-sharpening machine, the com-

bination of the main frame, the saw-clamping frame thereon provided with a clamping-spring, a lever *e'*, pivoted to act on said spring, and a reciprocating file-holder carriage having a surface *f g' g'* to act upon the said lever alternately to clamp and permit the release of the saw, substantially as shown and set forth.

2. In a saw-sharpening machine, the combination of the main frame, the saw-clamping frame thereon provided with devices for alternately clamping and releasing the saw, means for advancing the saw tooth by tooth, and the reciprocating carriage provided with means for operating said saw clamping and advancing devices, substantially as described.

3. In a saw-sharpening machine, the combination of the main frame, the saw-advancing finger, the plate and block for supporting said finger in the frame so as to be reciprocated vertically therein, a spring for holding the finger-supporting device normally down, and a reciprocating carriage provided with a foot to act alternately upon the supporting-block to elevate the finger to advance the saw a tooth, substantially as described.

4. In a saw-sharpening machine, a file-holder carrying two or more files supported in a reciprocating carriage, and means, substantially as described, for rocking said file-holder to present a different file to act on a saw-tooth when the direction of movement of carriage is changed, substantially as described.

5. In a saw-sharpening machine, substantially as described, a reciprocating carriage, a file-holder carrying two or more files supported in a frame pivoted on the reciprocating carriage, and springs on bolts passing through the frame to hold said file-holder with a yielding pressure against the reciprocating carriage and in position to file the saw, substantially as described.

6. The combination of a plate or frame A, provided with a groove rhomboidal in outline, combined with a carriage B, sliding on ways or guides on said frame or plate and having a slot, and a block in said slot having a rhomboidal parallelopiped part fitting in said groove, whereby when the carriage is reciprocated in the manner described the block is reciprocated in said slot, substantially as described.

7. The combination of a plate or frame A, provided with a groove rhomboidal in outline and having a flat spring secured at one end thereof, with its free end extending outward, combined with a carriage B, sliding on ways or guides on said frame or plate and having a slot, and a block in said slot having a rhomboidal parallelopiped part fitting in said groove, whereby when the carriage is reciprocated in the manner described the block is reciprocated in the slot, as set forth.

8. In a saw-sharpening machine, the herein-described saw-clamping device, comprising the parts *a' b'*, the latter of which has a spring-clamp and a lever for moving the same to clamp the saw between itself and the part *a'*, and the movable cross-piece *e'*, having an adjustable set-screw *h'*, substantially as described.

9. In a saw-filing machine, the combination, with the main frame and the saw-advancing device having a sliding block held normally in one position, provided with a stud, of the reciprocating file-carriage provided with adjustable feet *k k* to act upon said stud, whereby a reciprocating movement is imparted to the saw advancing or feeding device, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME S. MOSELEY.

Witnesses:
S. A. TERRY,
GEO. E. TERRY.