



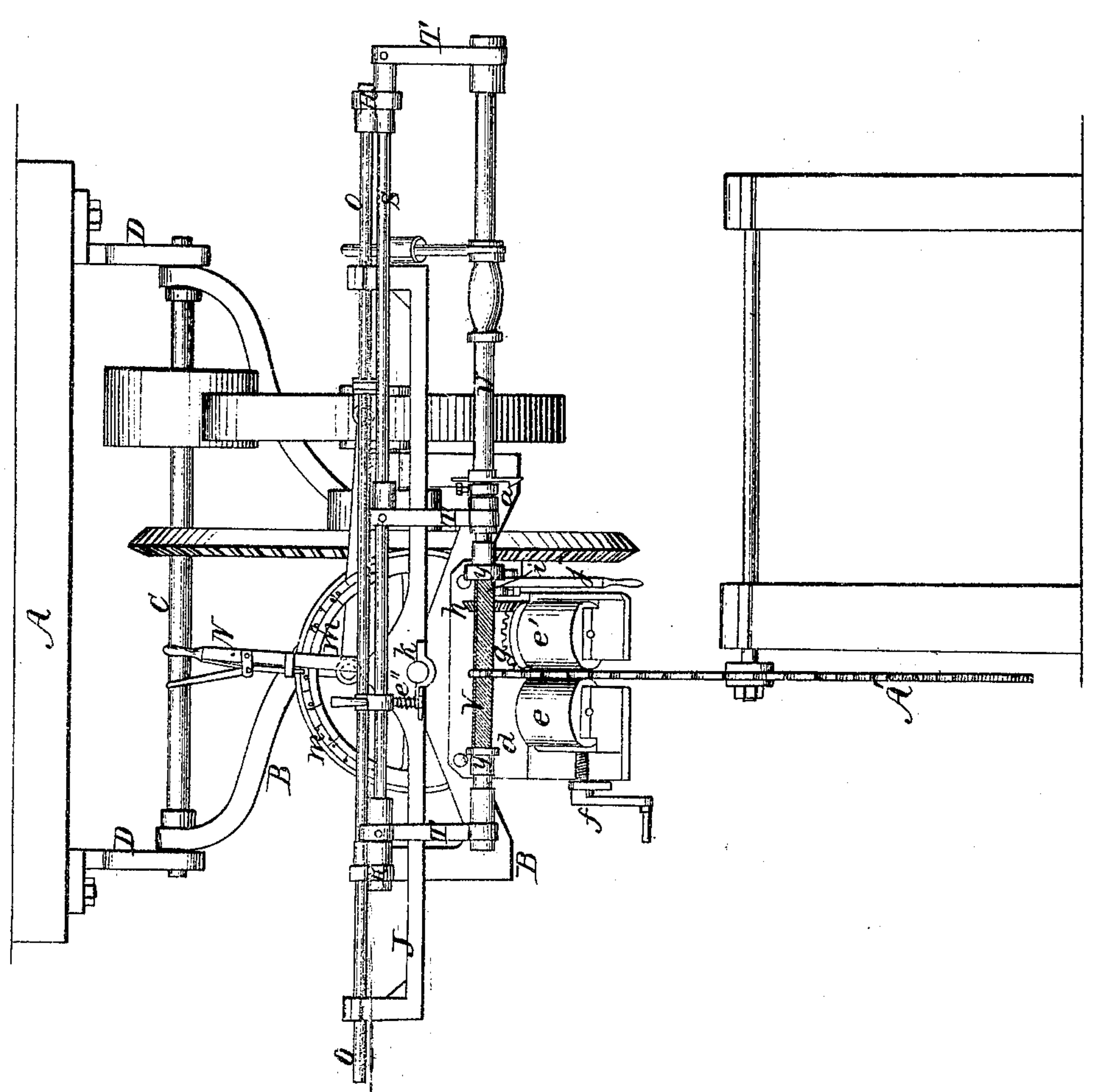
A. Thompson.

Saw Sharpener.

N<sup>o</sup> 90,207.

Patented May 18, 1869.

Fig: 2.



Witnesses  
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J. M. Morgan

Inventor;  
Albert Thompson  
Per *Wm. W. Co.* Attys

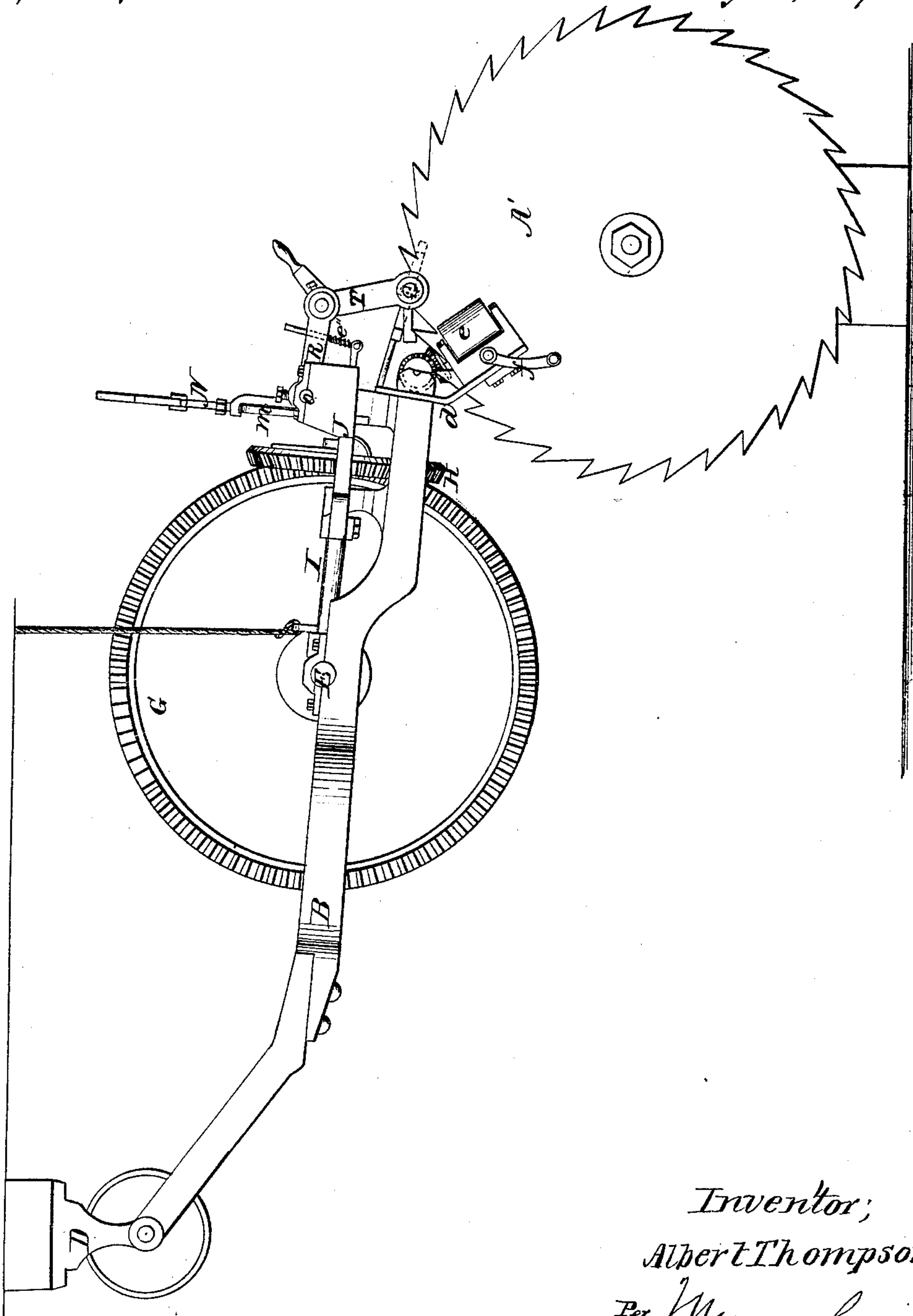
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Fig. 3.



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# United States Patent Office.

ALBERT THOMPSON, OF RIDGEWAY, PENNSYLVANIA, ASSIGNOR TO  
HIMSELF AND GILMAN T. WHEELER, OF THE SAME PLACE.

Letters Patent No. 90,207, dated May 18, 1869.

## IMPROVEMENT IN SAW-FILING MACHINE.

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, ALBERT THOMPSON, of Ridgeway, Elk county, Pennsylvania, have invented a new and improved Saw-Filing Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and useful machine for filing saws, more especially designed for filing circular saws used in sawing boards and other descriptions of lumber; and

It consists in suspending or hanging the machine in such a manner that it may be adjusted to the saw, while it is attached to and suspended from the frame of the mill, or from any convenient fixture.

It also consists in the construction and arrangement of parts, as hereinafter more fully described.

In the accompanying plate of drawings—

Figure 1 is a top or plan view of the machine.

Figure 2 is a front-end view of the same.

Figure 3 is a side elevation of the same.

Similar letters of reference indicate corresponding parts.

A is a timber, or portion of the mill-frame, from which the saw-filing machine is supported.

B is the frame, which is attached to the timber A by means of a shaft and hangers, as seen at C D in the drawing, and which supports the gearing and the operating-parts of the machine.

The machine is propelled by revolving the shaft E by means of the pulley F, by hand or otherwise, and its weight, when attached to the saw, is supported, in part, by pulley and cord, as seen.

G is the driving-gear wheel on the shaft E, which meshes into the gear-wheel H on the shaft I.

J represents a flat movable plate or bar, which is supported, by the frame B, on a central journal or trunnion, *k*, (see fig. 2,) and by the arm L, (by which it is connected with the shaft I by a box,) so that it is allowed to oscillate, or be turned from a horizontal to any desired position to place the file at the proper angle with the saw to give a shear or bevel to the side of the tooth when it is desired.

The trunnion *k*, it will be seen, is directly central with the saw-line, so that the shear or bevel given to the edge of the tooth will be uniform throughout the saw.

The plate J, by which the position of the file is governed, is held in any desired position by means of the disk or index *m*, which is rigidly attached to the frame B.

N is a lever attached to the plate J, having a spring-catch upon its side, which, as the lever is carried over the edge of the disk, by elevating or depressing the end of the plate J, engages with slots on the edge of

the disk, and thereby holds the plate J and the file at any desired angle.

O represents a rod, which is attached to the plate J by boxes, so that while it is allowed to have a partial revolving motion, it is given a longitudinal motion by means of a crank-pin on the back of the gear-wheel H, and the pitman P, which connects with a cross-head, *q*, which cross-head is attached to the rod o.

R R represent arms on the rod o.

S is a rod, which passes through the ends of the arms R loosely, so that it may turn therein.

T T T represent arms on the rod S. Through the ends of the arms T T passes the rod U.

The file V is connected with this rod at one end, as seen at *w*, and at the other end it is attached to the short section of a shaft, as seen at *x*.

The file is held in slots in the ends of these shafts, by means of hollow screw-nuts *y y*.

These shafts U and *x* are allowed to turn in the arms T T, so that the file V may be set at any angle, not only to fit the edge of the saw-tooth, but to give the right hook to the tooth.

This latter position is given by partially rotating the file, and holding it in the desired position by means of an arm, *z*, on the adjustable collar *a*, and spring-bar *b* on the rod *u*.

The ends of this bar *b*, and the end of the arm *z* are bevelled on one side, (the former being seen plainly in fig. 2,) while the bar, as it extends from the rod, is made to spring a little, so that when the rod is turned upward, it will revolve until the ends of the bar and the arm come in contact, when the rod and file will stop, thus holding the file in the required position for giving a uniform hook to the ends of the teeth.

The cut of the file is reversed on its sides, so that in being moved over the saw, it cuts or acts upon the saw on one tooth in moving to the left, operating on the tooth which is bent or set to the left.

When the edge of this tooth has been sufficiently filed, the sides of the file are reversed, and the next tooth is filed while the file is moved from left to right, the shear or bevel being given by turning the plate J on its trunnion *k*, as before mentioned.

By this latter arrangement, a uniform bevel or shear is given each tooth around the saw, while, by the arm *z* and spring-bar *b*, the hook of the teeth is made uniform.

It will be seen that the arm and bar are so arranged that the sides of the file may be reversed by turning the rod down, without altering the adjustable collar *a*.

*c* is a hand-lever, which has its fulcrum on the rod o, by which the file is pressed on to the saw. It is raised by a spiral spring, *c'*, as seen in fig. 2.

The plate J is operated to give the proper bevel or shear without stopping the motion of the file.

The mechanism for holding the saw steady, and for turning it as the filing-process progresses, is attached



to the under side of the frame B, and is seen in figs. 2 and 3.

*d* represents a plate, which is securely fastened to the front of the frame B, and drops down and projects forward from it, as seen in fig. 3.

*e e'* are two friction-rolls, which are supported on this plate on suitable arbors.

The roll *e* is attached to a stand, which is adjustable on the plate *d*, by means of a slot in the plate and the crank-screw *f*. The stand of the roll *e'* is stationary.

Any required amount of friction on the saw is obtained by turning up the screw *f*.

Upon the arbor of the roll *e'* there is a small bevel-wheel, *g*. *h* is another bevel-wheel which meshes into it. The latter wheel is supported on a shaft which carries a ratchet-wheel, *i*.

*j* is a lever, whose fulcrum is on the shaft of the wheel *h*.

When the end of the lever *j* is depressed, the pawl on the lever engages with the ratchet-wheel, and the shaft with the rolls is revolved, and the saw is also revolved or moved as much as may be desired.

When the lever *j* is raised, the ratchet and pawl do not act on the shaft.

As before stated, the whole machine is hung from the timber A, (which may be part of a temporary frame, or a part of the mill-frame,) so that it may be swung forward and attached to the saw, as seen in the drawing, and so that the saw (which is marked A' in the drawing) may be filed without removing it from its arbor, thus greatly facilitating the operation of sharp-

ening the saw, besides giving a uniform nook and shear to the teeth.

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

1. Hanging the saw-filing machine on a frame, or other fixture, as described, so that it can be swung to and adjusted on a circular saw, without removing the saw from its arbor, substantially as herein shown and described, and for the purposes set forth.

2. The plate J, carrying the filing-mechanism, when supported by the central journal *k*, and the arm L, hung upon the shaft I, and adapted for turning the file to an angle other than a right angle to the saw, by means of the graduated disk M and spring-catch lever N, all arranged and operating as herein shown and described.

3. The laterally-adjustable roll *e*, and the roll *e'*, having fixed bearings, when operated by means of the gear-wheels *g h*, ratchet-wheel *i*, and pawl-lever *j*, and arranged upon the plate *d*, suspended from the frame B, as herein described, for the purpose specified.

4. Reversing and stopping the file, and holding it in any desired position, by means of the adjustable collar *a*, arm *z*, and spring-bar *b*, as described.

5. In combination with the movable plate J, the disk or index *m*, with the catch-lever N, substantially as and for the purposes herein shown and described.

ALBERT THOMPSON.

Witnesses:

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