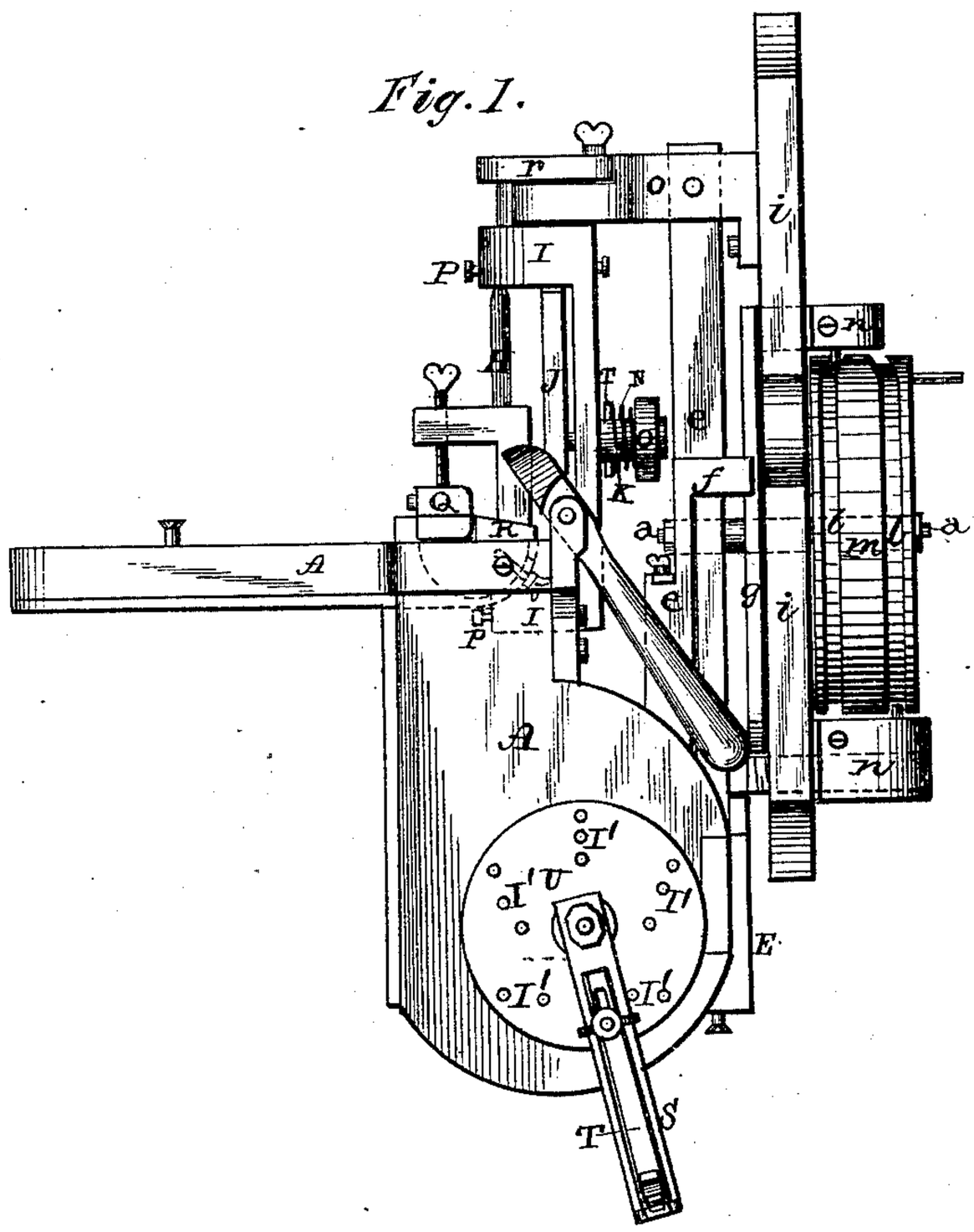
(No Model.) 4 Sheets—Sheet 1.

H. REILY.

Saw Filing Machine.

No. 232,063. Patented Sept. 7, 1880.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

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Fig. 2.

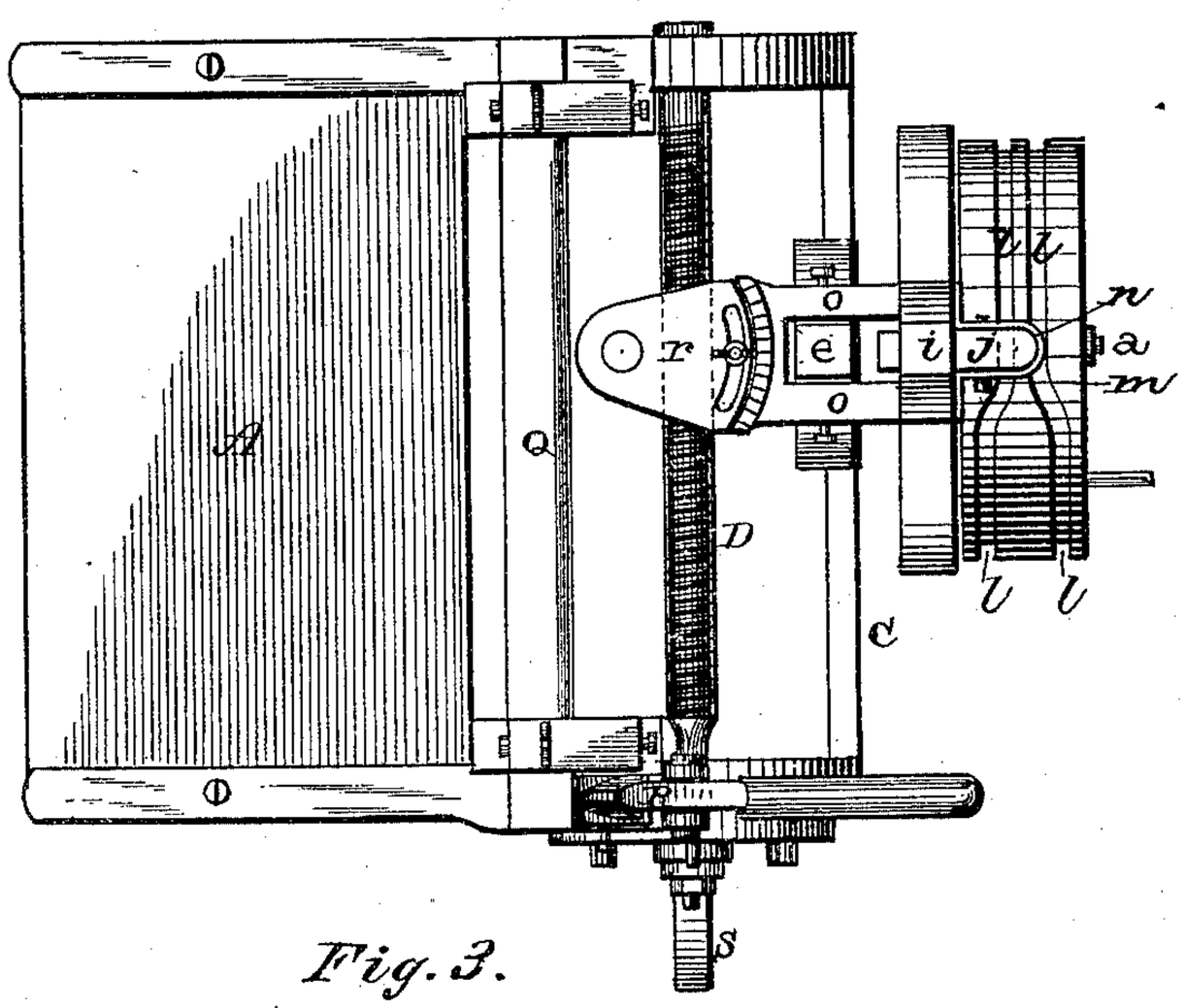
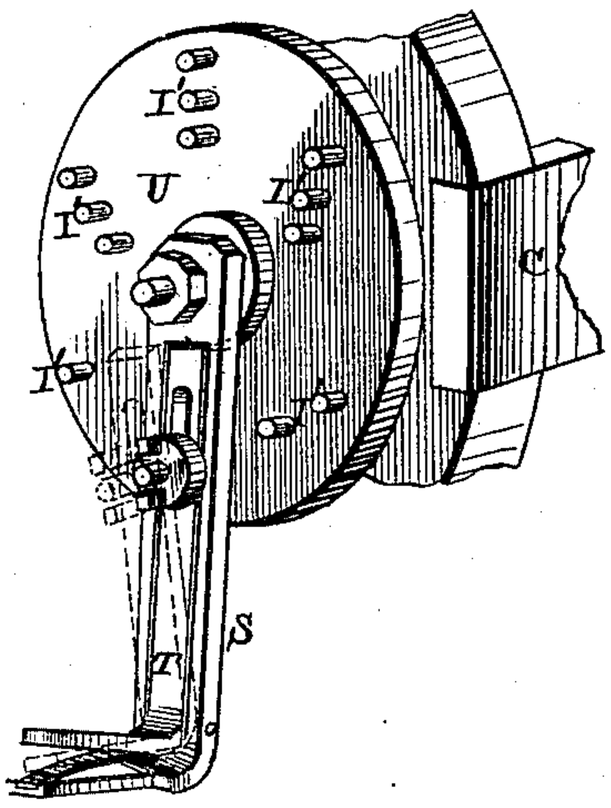


Fig. 3.



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(No Model.) 4 Sheets--Sheet 3.

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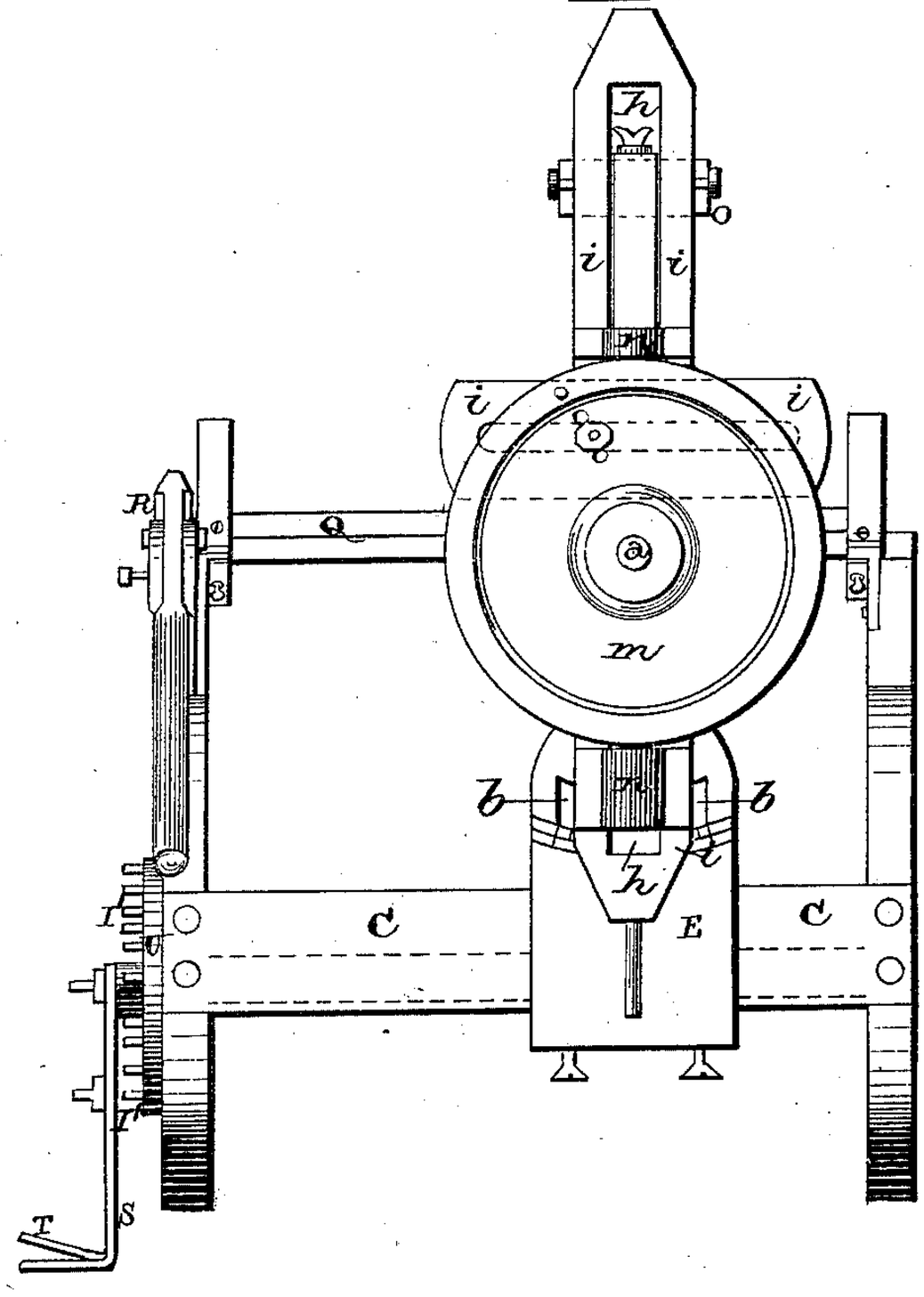
No. 232,063. Patented Sept. 7, 1880.

Fig. 4.



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Saw Filing Machine.

No. 232,063. Patented Sept. 7, 1880.

Fig. 5.

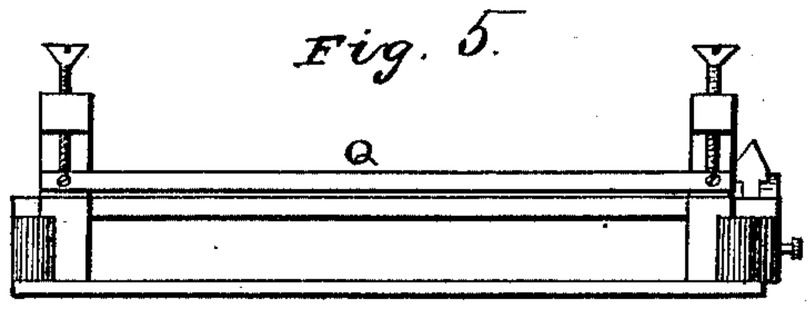


Fig. 6.

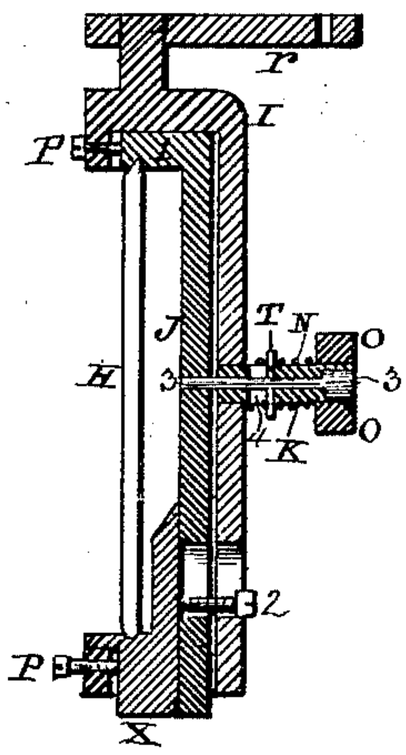


Fig. 8.

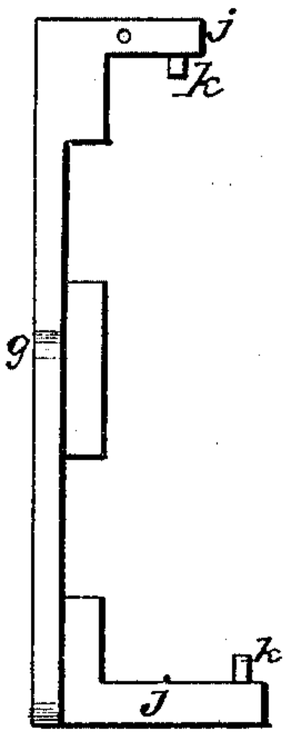


Fig. 7.

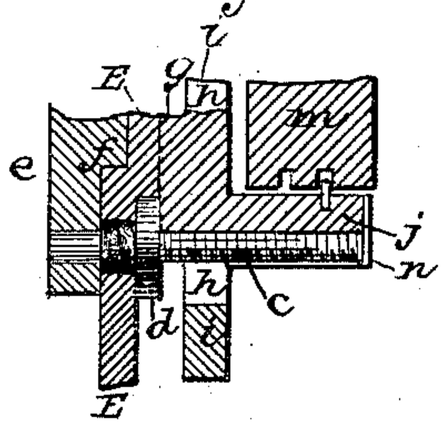
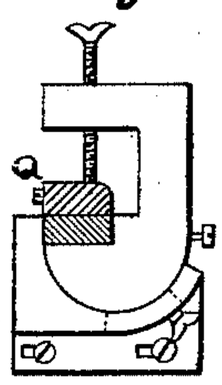


Fig. 9.



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UNITED STATES PATENT OFFICE.

HENRY REILY, OF RIXFORD, PENNSYLVANIA.

SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 232,063, dated September 7, 1880.

Application filed March 23, 1880. (No model.)

To all whom it may concern:

Be it known that I, HENRY REILY, of Rixford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Saw-Filing Machines, (Case B;) 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in saw-filing machines; and it consists in the combination of a mechanism for operating the file, and which mechanism is made to reciprocate both vertically and horizontally, with a screw-shaft for moving the mechanism back and forth, and a crank that is provided with a spring-stop for catching against the pins or projections in a plate upon the end of the frame, and which pins regulate the distance that the screw shall be turned, as will be more fully described hereinafter.

Figure 1 is a side elevation of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view. Fig. 4 is a front elevation. Fig. 5 is an edge view of the clamp, taken from the front. Fig. 6 is a vertical section of the file-holder. Fig. 7 is a vertical section of the machine, taken through the clamping-screw, by means of which the frame is secured at any desired angle. Fig. 8 is a side elevation of the guide. Fig. 9 is a vertical section of the saw-clamp.

A represents a frame, which is to be securely clamped to the edge of the bench.

Moving horizontally back and forth upon the guide C by means of a screw-shaft, D, is the standard E, upon which the mechanism for operating the file is pivoted. Through the upper part of this standard is passed the pivotal bolt *a*, upon which the vertically-moving frame and the guide upon which the frame moves are secured. Cut through this standard E, near its center, is a curved slot, *b*, through which the screw bolt or guide *c* is passed, which bolt has a suitable clamping-nut, *d*, placed upon it for the purpose of clamping the pivoted guide *e* at any desired angle.

Upon the outer side of the standard E there is marked a suitable scale for the purpose of adjusting the guide, and by means of the guide the file-holding mechanism can be adjusted at any desired angle at which it may be desired to file the teeth of the saw. As this guide *e* has no vertical movement, it is provided with the shoulders *f*, which catch upon the corresponding shoulders formed on the standard, and which shoulders are cut on a curve to correspond with the curve of the slot *b*.

Placed on the pivotal bolt *a*, on the outer side of the standard E, is the guide *g*, which has flanges formed on its outer side to project into the slot *h*, formed in the vertically-moving frame *i*, and serve as guides, upon which this frame moves. These flanges are separated from each other for the purpose of allowing the wrist-pin of the operating-wheel to pass through them as the wheel revolves. Upon each end of this guide *g* is a projection, *j*, which passes through the slot *h* in the vertically-moving frame *i*, and which projection has a stud, *k*, on its inner side, which studs catch in the two cam-grooves *l* of the operating-wheel *m*.

The vertically-moving frame *i* is held in close contact with the guide *g* by means of straps *n*, which pass around the projection *j*, and have their ends turned outward, so as to bear against the outer side of the frame *i* and keep it always in a proper position.

Owing to the shape of the two cam-grooves in the surface of the operating-wheel *m* the guide and the vertically-moving frame are alternately drawn outward toward the wheel, which is held in place on the pivotal bolt *a* by means of a suitable shoulder or other similar device, and then forced inward against the standard E. By this movement the file is moved toward the saw upon one stroke and drawn backward upon the other.

Secured to the upper end of the vertically-moving slotted frame *i* is an arm, *o*, which has a sufficient opening through it to allow it to play up and down and back and forth over the upper end of the pivoted guide *e*, and which arm serves to support the file and its holder.

The file-holder is secured to a slotted plate, *r*, which rests upon the top of the arm *o*, and which can be adjusted back and forth to the scale on the arm for the purpose of adjusting the file at any desired angle to the teeth of

the saw. This plate *r* is secured to a projection on the upper end of the file-holder, and this projection serves as a pivot, which catches on the inner end of the frame and upon which the file-holder and the plate turn. After the plate and the file-holder have been adjusted to any desired angle they are rigidly secured in place by means of a set-screw, so that the angle of the file cannot be changed.

The straight triangular file H is securely held in suitable bearings, which are secured in the file-holder I, and which file-holder can be turned upon its pivot so as to present the file at any angle to the teeth of the saw.

The file-holder consists of the frame I, the part J, and the vertically-adjustable block X.

The holder-frame I has a recess made in its upper part and a hole made through its lower end, and the part J, having the head 1, is passed up through this hole until its head fits in the recess in the holder I.

The file H is held between the head 1 and the block X, and as this block is made vertically adjustable and is secured when adjusted by means of the set-screw 2, which passes through the slot in both the parts I J, files of different lengths can be used. The slot through the part I is wider than the one through the part J, and hence the screw is free to move back and forth and up and down in the part I.

The operating mechanism, by means of the slot in the standard E, can be inclined from one side to the other, so as to present the file at any desired angle to the teeth of the saw.

The saw while being sharpened is held rigidly in place by means of the clamp Q, which clamp is made curved on its under side and fits in a correspondingly-shaped recess on the frame A. Through the frame A, under this clamp, are made curved slots, through which pass the set-screws, for the purpose of adjusting the clamp holding the saw at any desired angle to the horizon while the teeth are being set. Upon the end of the frame A, at one end of this clamp, is secured the saw-set R, the anvil part of which set can be adjusted vertically in any suitable manner, so as to adapt it to be used with the clamp no matter at what angle the clamp may be adjusted.

Secured to one end of the screw-shaft is the crank S, which is to be operated by the left hand each time that it is necessary to move the machine forward to have another tooth presented to the file. This crank has a slot cut in it, and in this slot is pivoted a slotted lever, T, which is provided with a movable stop for the purpose of catching against the pins I′, secured in concentric circles upon the circular plate U around the end of the shaft. This movable stop projects through the slot in the lever, and by catching alternately against any one set of pins I′ regulates the distance which the screw shall be turned and the distance which the file shall be moved along so as to be presented to a new tooth. These pins I′ are placed various distances apart, and the space between each set of pins will allow the handle to be moved just so far forward, and thus move the file forward a sufficient distance to present it to the same size of tooth of different kinds of saws.

Whenever the stop is run against one of the pins so as to prevent the forward motion of the crank, by operating the lever to which the stop is secured the stop can be raised over that pin so as to be moved on around to the next one.

The advantage of moving the file-operating mechanism horizontally along so as to present the file to each new tooth is, that the saw, after being once clamped, need not be moved while it is being sharpened, whereas if the mechanism is not moved in this manner the saw must be constantly changed so as to present each new tooth to the saw.

No claim is made in this application to any of that part of the machine which operates the file-holder up and down, and moves it from and toward the saw, for this is shown and claimed in Case A, filed in the Patent Office March 23, 1880.

Having thus described my invention, I claim—

1. The combination of the sliding standard E, carrying the file-operating mechanism, screw-shaft D, slotted crank S, pivoted lever T, provided with an adjustable stop, and circular plate, U, having a series of pins, I′, substantially as described.

2. In a file-holder, the combination of the part I, bar J, block X, and suitable adjusting-screws with the rod 3, sleeve K, spring N, and pin T, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY REILY.

Witnesses:
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