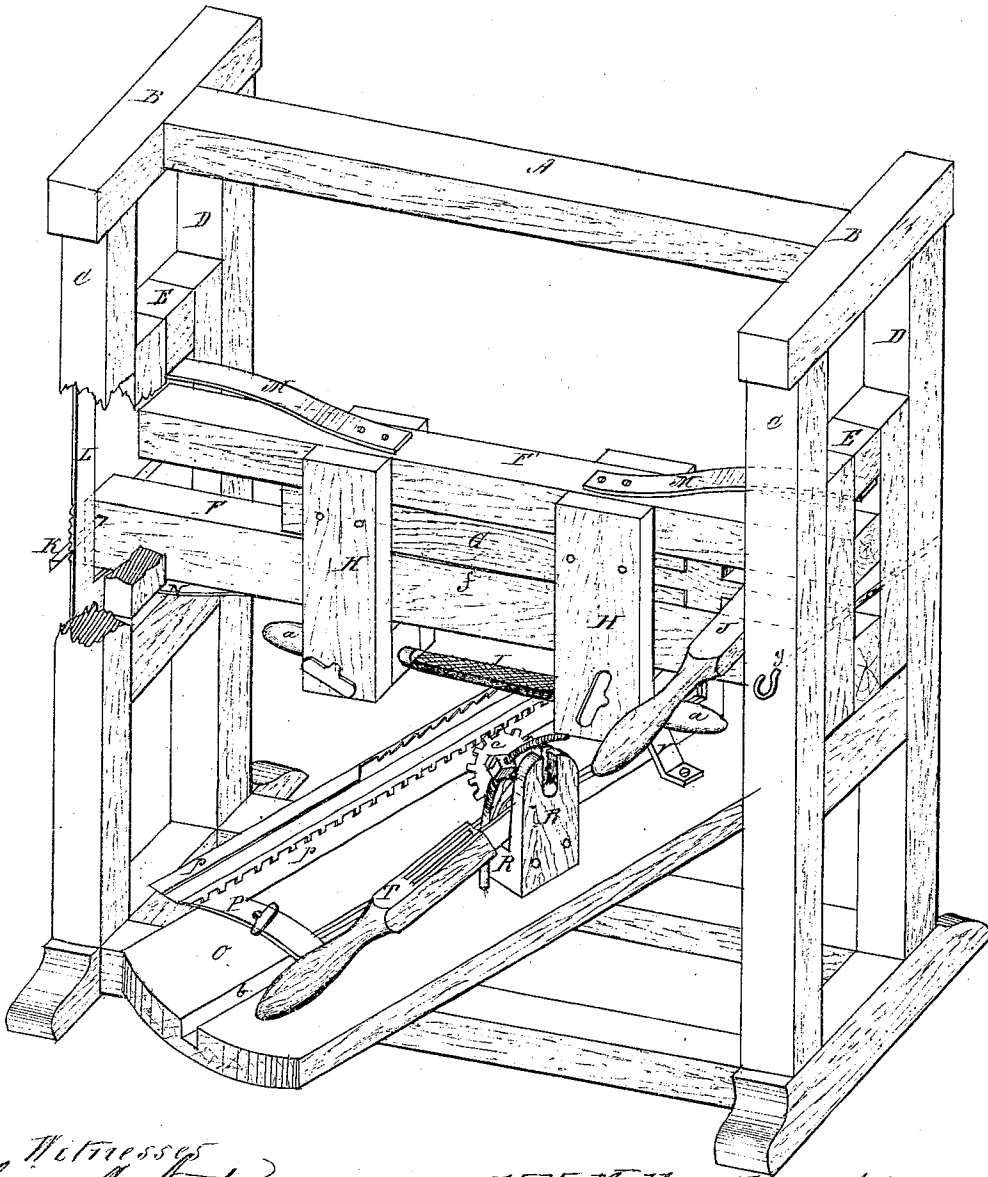


H. H. Mellen,

Saw Sharpening.

No. 105,108.

Patented July 5, 1870.



Witnesses
Henry J. Smith

H. H. Mellen, Inventor.
By A. S. McIntire & Co.
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United States Patent Office.

HENRY H. MELLEN, OF BOONVILLE, INDIANA.

Letters Patent No. 105,108, dated July 5, 1870.

IMPROVEMENT IN SAW-FILING MACHINES.

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, HENRY H. MELLEN, of Boonville, in the county of Warrick and State of Indiana; have invented certain new and useful Improvements in Saw-Filing Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making a part of this application.

The nature of my invention consists in having the file in a vertical frame sliding horizontally between guides which, in turn, can be adjusted vertically, as will be hereinafter more fully set forth.

And my invention further consists in arranging the saw-clamps upon a pivoted table below the file, and made adjustable longitudinally by means of a rack and pinion device, as will be hereinafter more fully explained.

And my invention further consists in the peculiar device for preventing the cutting by the file while being drawn back; and also in the device for regulating the position of the guides, whereby the depth of cut is regulated, and the file lifted when the clamp carrying the saw is to be moved forward.

And my invention further consists in the device for holding the ends of the file, and regulating the length of stroke.

To enable those skilled in the art to understand my invention, I will proceed to describe the same, referring by letters to the accompanying drawing, which is a perspective view of my improved saw-filing machine.

A represents the top beam of the frame, supported on cross-pieces, B B, by means of double standards C and D on each side.

Between these standards C and D, are placed frames E, which, in turn, hold the horizontal pieces or guides F F', between which the slide G moves freely.

Attached to the slide, near each end, are forked hangers, H, between which, at a suitable distance below the lower guide, is confined the file I, its two ends being clamped between the two adjustable bearings *a a*. These bearings are made adjustable by passing through holes or passages in the hangers, which are provided with thumb-screws, which are made to impinge against the clamps, and hold them at any position. It will thus be seen that the length of stroke or the length of file to come in contact with the saw may be altered to suit circumstances.

The under side of the slide G rides upon a small caster or wheel running loosely in an inclined groove cut in the lower guide F, (as shown in dotted lines at *f*), in such a manner that when the lever J, attached to one end of the slide G, is moved from the left to right, (on the back-stroke of the file,) the slide G will

rise slightly on the roller or caster *f*, and thus avoid the back-cut of the file.

The lower guide F' extends at one end beyond the standards C, and is provided at that end with a bar, K, the ends of which rest against notches in a spring-frame, L. By pressing inwardly this spring-frame, the lower guide is released, and the whole frame may be raised between the standards when it is desired to move the saw holding-frame or clamps, in order to present a new tooth to the file.

Flat springs M, secured to the upper side of the upper guide F', and bearing with their free ends against the frames E tend to keep the said upper guide F' in proper contact with the slide G, while a spring, N, secured to the under side of the lower guide F, at that end where the latter projects beyond the standards, and bearing with its free end against a suitable cross-piece between the standards, has a tendency to elevate the lower guide, the position of which can be regulated by the bar K and spring-frame L, as above described.

Pivoted suitably to the bottom frame of the machine is a table, O, having a longitudinal groove, *b*, in which freely moves a saw-holding frame.

This frame consists of two pieces, P P, each having at the under side of its upper face a rack, *p*, and secured to each other by means of thumb-screws, as clearly seen in the drawing, so as to confine between them the saw.

On one side of the groove *b* is a forked standard, R, forming the bearing for a shaft, on the inner end of which is securely keyed a pinion, *c*, which meshes with the one of the racks *p* nearest to it, the same shaft carries between the forks of the standard a ratchet-wheel, S, of suitable size, which is operated by a handle or lever, T, having a swinging pawl engaging with the ratchet.

A guide, U, running upon an arm regulates the extent of the motion of the lever T, and, consequently, the distance the saw frame is moved by the rack and pinion.

On the other side of the frame, straddling the groove *b*, is a guide, V, for keeping the upper edge of the saw-holding frame in proper position as it slides along. This guide is provided with a set-screw, which, when desired, is used for firmly holding the saw frame at any desired point.

The operation of my saw-filing machine is very simple. The guide U, having been set so that the movement of the lever T will, through the ratchet and pinion, move the saw-holding frame precisely the length of one tooth of the saw, and the other parts being in position shown in the drawing, the first movement of the lever J will produce a back stroke of the file,

the slide G, hangers H, and file I, all being raised by the caster, as set forth, and by moving the lever back and forth the tooth may be sharpened to any degree.

One tooth being finished, the spring-frame L is pressed inwardly, and the lower guide F released, and lifted to clear the file from the saw-teeth, the set-screw on the guide V being loosened, a simple movement of the lever T, upwardly, until it strikes the guide or stop U, will cause the saw-clamp or frame to travel forward a distance exactly equal to that between the teeth of the saw.

The guide F is now lowered, allowing the bar K to catch in the desired notches on the spring frame L, when the filing operation is again resumed.

One side of all the teeth having been filed, the saw-holding frame is taken out of its groove, and turned end for end, thus presenting the other side of all the teeth to the operation of the file.

The desired bevel is given to the cut of the file by swivelling the table O upon its center or pivot.

It will also be seen that a peculiarity of my invention consists in the arrangement and construction of the guides F F', with their flat springs M N, frames E, slide G, and hangers H, carrying the file-bearings and file, whereby these parts, as a whole in themselves, may be readily secured to and removed from the frame proper, whenever it may be deemed necessary or convenient, their removal being accomplished by simply disengaging the lever J and bar K, and withdrawing the securing-pin Y.

It is obvious that I may be enabled to sharpen circular as well as straight or other saws, but it may be preferable in large circular saws to dispense with the table O, and its appurtenances, merely placing the saw

on a suitable pivot to be provided for that purpose on the frame, and arranged at the proper angle to the file.

Having described the construction and operation of my improved saw-filing machine,

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

1. The horizontally-sliding frame carrying the file, in combination with the vertically-adjustable guides F F', bar K, springs M N, and spring frame L, all constructed and arranged substantially as and for the purpose set forth.

2. The saw-clamps P P, with rack p, in combination with the swivelling table O, standard R, lever T, stop U, pinion c, guide V, and ratchet-wheel, all constructed and operating substantially in the manner and for the purposes set forth.

3. The caster and groove underneath the slide G, for preventing the back cut of the file, constructed and operating substantially as and for the purposes set forth.

4. The guides F F', with their flat springs M N, frames E, slide G, and hangers H, carrying the file-bearings and file, arranged within and made removable from the frame proper, substantially in the manner and for the purposes set forth.

5. In combination with the above, the adjustable file-bearings a a, by means of which the file is adjusted longitudinally, or different faces presented to the work, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand and seal this

day of April, 1870.
HENRY H. MELLEEN. [L. S.]

Witnesses:

J. G. DARLEY,
J. B. HAWLEY.