J. WAGNER.

Saw-Sharpening Machine.

No. 202,309. Patented April 9, 1878.

Fig. 1.

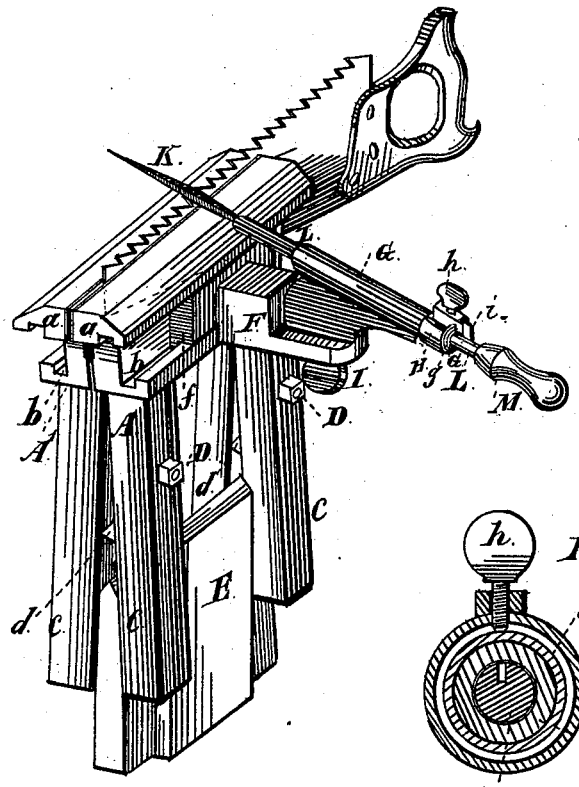
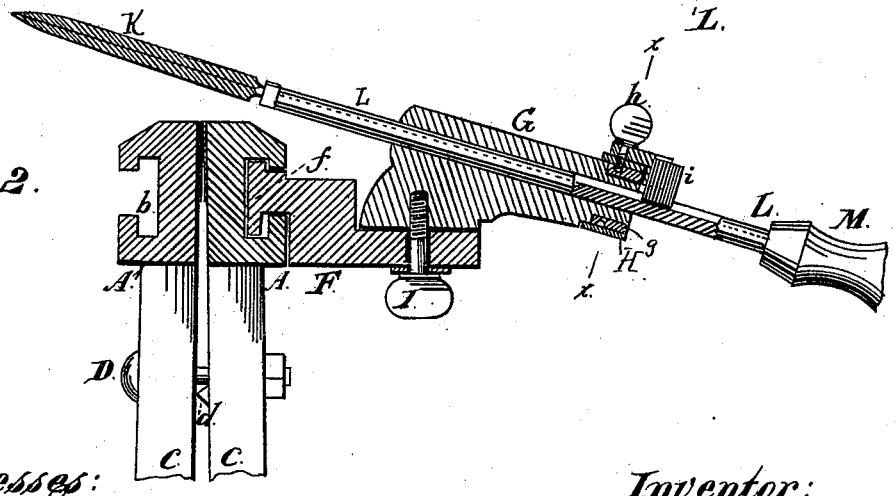


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN WAGNER, OF GRAND RAPIDS, WISCONSIN.

IMPROVEMENT IN SAW-SHARPENING MACHINES.

Specification forming part of Letters Patent No. **202,309**, dated April 9, 1878; application filed February 28, 1878.

To all whom it may concern:

Be it known that I, JOHN WAGNER, of Grand Rapids, in the county of Wood and State of Wisconsin, have invented a new and Improved Saw-Sharpening Machine, of which the following is a full and accurate description, reference being had to the accompanying drawing.

The nature of my invention relates to a machine or apparatus for filing the teeth of saws; and it consists, first, of a clamp for holding the saw-plate, which clamp is tightened and held by a wedge-shaped plate inserted between the clamp-legs, said wedge-plate being first secured in a bench-vise; and, further, in the attachment of an adjustable file-handle and guide, which will hold the file at the exact angle for all teeth alike, and will prevent the filing below the intended tooth-line of the saw.

In the drawing, Figure 1 is a perspective view of the saw-sharpening machine ready for use. Fig. 2 is a cross-section, showing the construction of the saw-guide arrangement; and Fig. 3 is a section on line *x x* in Fig. 2.

A and A′ are the two jaws of the saw-clamp, consisting each of a bar, *a*, with a smooth inner face, and with a T-groove, *b*, in its outward face, and having each two legs, *c*. Triangular projections *d* are fixed to the inner sides of one pair of legs for holding the legs of the two separate jaws apart; and carriage-bolts D are for holding the two jaws A and A′ together.

E is a plate, the ends of which are wedge-shaped, so as to enter between the spread-apart ends of the legs, and close the clamp-jaws upon each other. This plate E is to be firmly secured in a bench-vise, or by any other means, so as to be stationary.

The saw is placed in the clamp by first springing the jaws apart, which is done by contracting their legs, and is firmly held therein by placing said legs over the wedge ends of plate E, when, by pushing the clamp downward, the saw will be tightened and the clamp fixed.

F is the file-guide holder, which is secured to an oblong T-bar, *f*. This bar *f* is loosely fitted into the T-shaped grooves *b* of the clamp-jaws, so as to slide forward and back therein, and permit a limited vibrating motion in a vertical direction. The outward end of the file-guide holder is rounded and graduated with degree-lines.

G is the guide for the file-handle, it being a tube, having a foot-piece angular therewith, which is pivoted upon the holder F by a thumb-screw, I, passing through the latter into the former, for adjusting and holding the handle-guide in any desired angle with the holder. The rear end of the guide G is entered into a ferrule, *g*, which has an annular groove around its face. This ferrule *g* is surrounded by a ring, H, having a thumb-screw, *h*, the point of which enters the annular groove in ferrule *g*, so that said ring cannot slide off, but will turn loose upon it, and can be firmly secured in any desired angle by tightening the said set-screw *h*. This ring H has an endwise-projecting radial plate, *i*.

K is the saw-file, secured into the ferruled end of a cylindrical bar, L, placed through the tube of guide G, and having an oblong groove, entered by the radial plate *i* of ring H, so that said bar L can be given a reciprocating sliding motion, but cannot be rotated in said guide-tube G without first loosening the set-screw *h*, whereby the file-touch can be adjusted to the shape of the saw-tooth. The rear end of the cylindrical bar L is entered into a socket in handle M.

The *modus operandi* for using the above-described machine is as follows, to wit: The saw being properly adjusted in clamp A by means of a suitable gage, so that the saw-teeth will project an equal distance above the clamp-jaws, and the clamp being placed over the wedge-plate, the file-guide holder is to be inserted in one of the T-grooves of the clamp, and the guide G is adjusted to the proper angle, when every other tooth of the saw is filed as long as the loose fit of the bar *f* in the groove *b* will permit the file to scrape the tooth. After one-half of the teeth have thus been sharpened the clamp, with the saw in it, is reversed, and the file-handle holder is inserted into the opposite T-groove *b*, and is adjusted again to the opposite similar angle, when the intermediate teeth are filed in a similar manner.

As will be noticed, with this machine the operator cannot, in sharpening a saw, do oth-

erwise than file all the teeth to the same depth and on the same angle, the operation requiring neither skill nor a steady hand.

What I claim as my invention is—

1. The saw-clamp consisting of bars *a a*, legs *c c c c*, having projections *d d* and bolts D D, in combination with the wedge-plate E, substantially as and for the purpose set forth.

2. In combination with a saw-clamp, substantially as described, and having T-shaped grooves, the holder F, guide G, ring H, set-screw *h*, radial plate *i*, bar L, handle M, and screw I, all constructed and arranged substantially in the manner and for the purpose set forth.

3. The saw-clamp consisting of bars *a a*, having T-shaped grooves *b b*, legs *c c*, projections *d d*, bolts D D, and wedge-plate E, in combination with the holder F, guide G, ring H, set-screw *h*, radial plate *i*, bar L, handle M, and screw I, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

JOHN WAGNER.

Witnesses:
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