T. H. McCRAY.
Saw-Sharpener.

No. 208,024. Patented Sept. 17, 1878.

Fig. 1.

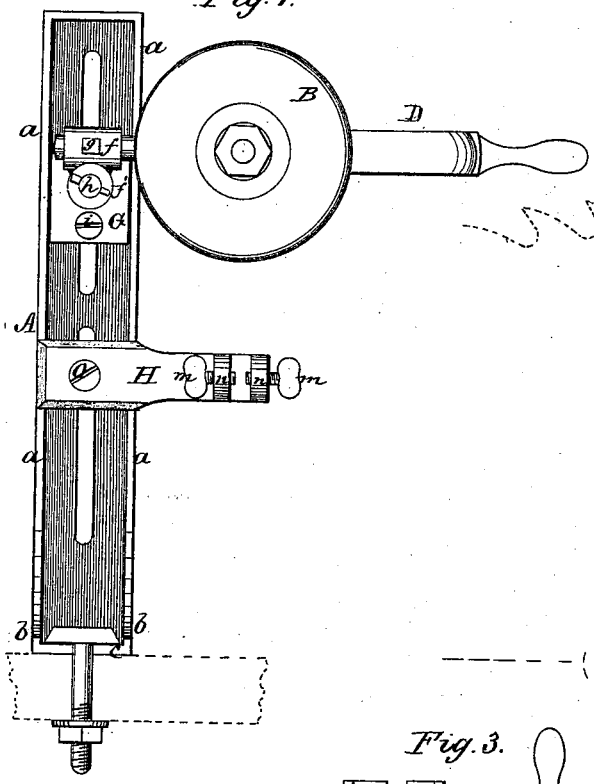


Fig. 2.

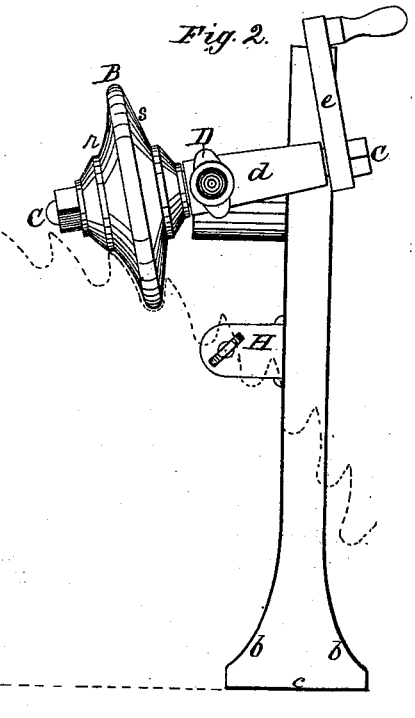


Fig. 3.

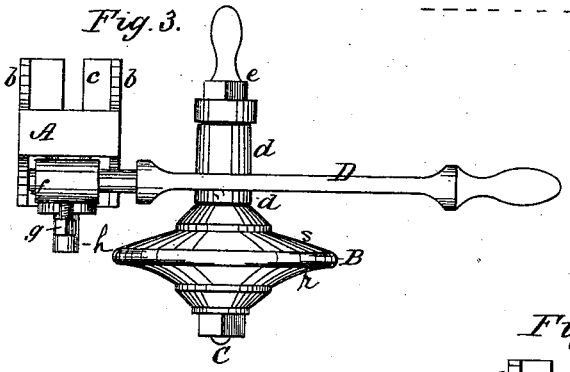


Fig. 4.

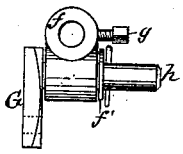


Fig. 5.

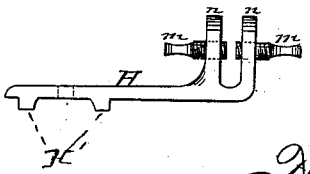
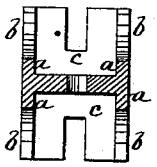


Fig. 6.



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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS H. McCRAY, OF EVANSVILLE, INDIANA.

IMPROVEMENT IN SAW-SHARPENERS.

Specification forming part of Letters Patent No. **208,024**, dated September 17, 1878; application filed January 29, 1878.

To all whom it may concern:

Be it known that I, THOMAS H. McCRAY, of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and Improved Machine for Sharpening and Gumming Saws; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention is an improvement in the class of saw sharpening and gumming machines in which a small emery-wheel is mounted adjustably upon a standard that is adapted to be clamped to the saw-frame.

The invention relates to the construction and arrangement of parts, as hereinafter described and claimed.

In the accompanying drawing, forming part of this specification, Figures 1 and 2 are different side elevations of the machine. Fig. 3 is a plan view. Figs. 4 and 5 are detail views of the joint-piece and saw clamp or guide detached. Fig. 6 is a cross-section of the flanged standard.

The standard A is a straight metal bar, having a thin web or body, upon the edges of which are cast lateral right-angular flanges or ribs *a*. At the base of the standard these flanges are gradually extended to form braces *b*, of the same width as the flat base *c*, with which they are united in the casting process. By this construction of standard I secure maximum strength with a minimum weight and cost of metal, while the flanges serve as shoulders or guides, which assist in holding other movable parts rigidly in any adjustment, as will be presently described.

The web of the standard is provided with two lengthwise and aligned slots, to adapt it for attachment and adjustment of the grinding-wheel and saw-guide, and the base *c* has two open slots to receive the shanks of the screw-bolts by which the standard is attached to the saw-frame.

The emery-wheel B is mounted upon an arbor, C, having its bearings in bosses or lateral annular projections *d*, formed on the hand-lever D, which is attached adjustably to the standard A. A hand-crank, *e*, is affixed to the arbor C for use in rotating the emery-wheel for grinding and sharpening or gumming the saw-teeth. The reduced inner end of the lever enters a socket, *f*, forming a tubular half of a joint-piece, and is clamped therein by a screw, *g*. The lower half of the joint-piece is a tube, *f'*, which is fitted on the wrist-pin *h*, projecting from a block, G, that is fitted between the lateral flanges or ribs *a* of the standard A, and may be clamped and secured in any vertical adjustment by means of a screw, *i*, passing through the upper slot in the standard. Said flanges assist in holding the block firmly in place, so that the emery-wheel may be operated with the desired steadiness and precision.

The joint-piece *f f'* permits motion of the lever in a vertical plane only; but the lever may be turned on its axis in the socket *f*, to set the wheel B at various inclinations to a vertical plane, so that it will work upon the saw-teeth at any desired angle.

The edge of the saw is clamped by screws *m* between the lugs or fingers *n*, formed on the bracket or arm H, extended laterally from the standard. Said arm is made vertically adjustable on the standard by means of a screw, *o*, which passes through the lower slot therein. The arm has parallel ribs H', which lie in contact with the lateral ribs *a* of the standard, and assist in holding the arm rigid in any adjustment.

The practical operation is as follows: The standard A is first secured vertically upon the frame of the saw, in proper local relation to the edge of the saw, which is then clamped between the fingers *n* of the arm H. The fulcrum-block G is then adjusted up or down on the standard, according to the diameter of the saw. The operator next adjusts the lever D by turning it in its socket, thus causing the wheel to assume the proper inclination to the saw-teeth. The operator then takes the end of the lever in his left hand, and by vertical adjustment thereof applies the wheel to the teeth and simultaneously rotates the arbor with his right hand, until the desired effect has been produced. The saw is then released from the clamp and rotated far enough to bring another tooth in position to be operated upon by the wheel, and so on, until one edge of all the teeth has been ground and sharpened. The wheel is then set at another inclination, to enable its opposite side to work on the other edge of the

teeth successively, and the operation is repeated.

The wheel has such form or contour in cross-section as adapts it to work on the whole cutting-edge of the teeth. Thus, one side of the wheel is concave, and the other side is straight, between the hub or axis and periphery of the same, as shown, respectively, at *r* and *s*. The concave side *r* works on the convex or curved edge of the saw-teeth, and the other side, *s*, on the straight side of the same.

I do not claim an emery-wheel having its bearings in a pivoted and adjustable lever, nor the employment of a forked clamp for holding the edge of the saw to be sharpened; but

What I claim is—

1. The combination of the fulcrum-block having wrist-pin *h*, the joint-piece *f f'*, the lever, and the emery-wheel having its bearings therein, the flanged and slotted standard, and screw for securing said block in the desired adjustment, as shown and described.

2. In combination with the flanged and slotted standard, the flanged lever for holding the edge of the saw having ribs H', and the clamp-screw, as shown and described.

3. The combination of the emery-wheel and crank-arbor, the hand-lever, the joint-piece, and the fulcrum-block, provided with a wrist-pin, around which the lever is adjustable in a vertical plane, as shown and described.

T. H. McCRAY.

Witnesses:
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