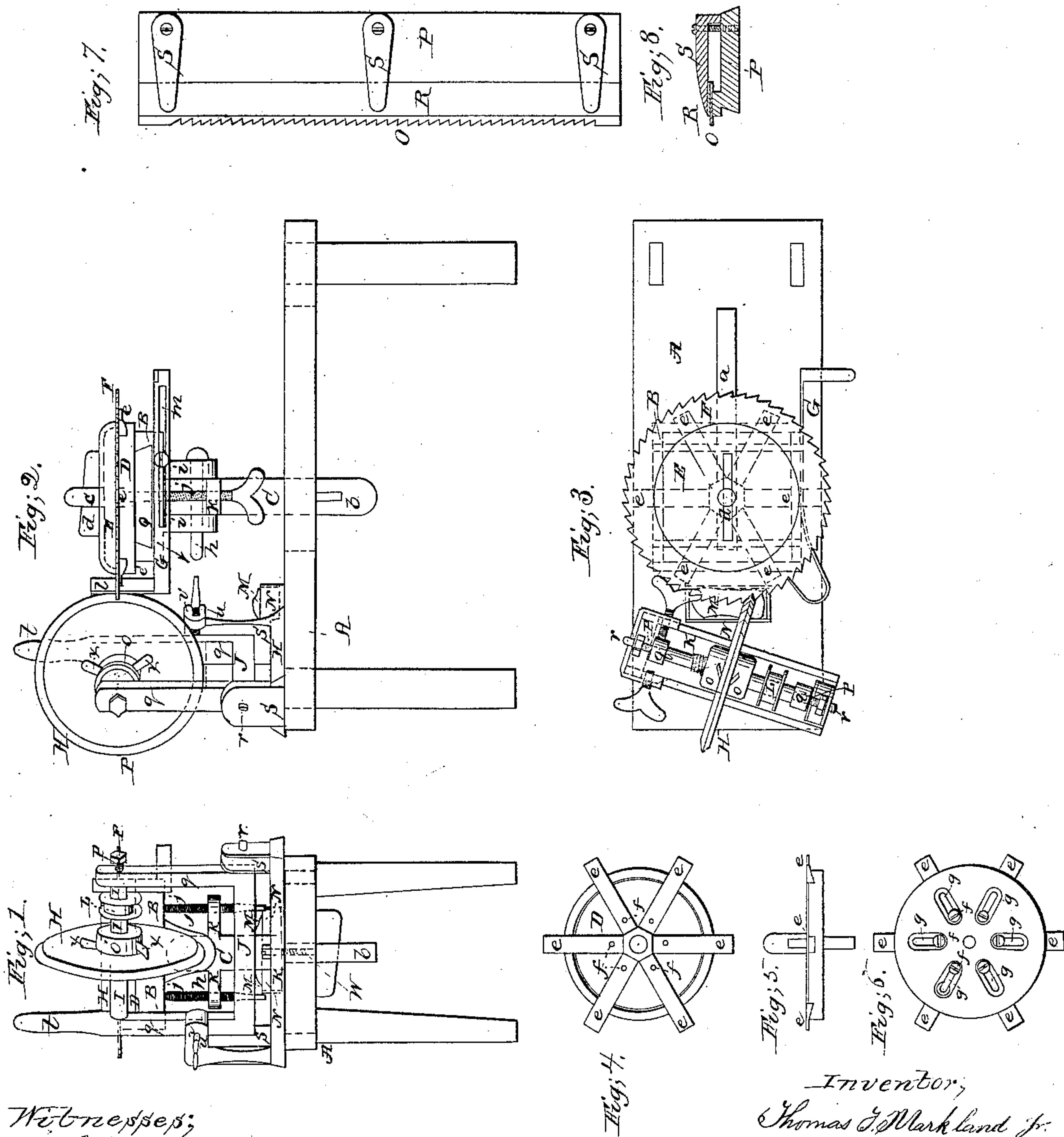


*T. T. Markland Jr.,*  
*Sharpening Rotary Saws.*  
*N<sup>o</sup> 63,407.*      *Patented Apr. 2, 1867.*



Witnesses;  
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 By his Attorney  
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# United States Patent Office.

THOMAS T. MARKLAND, JR., OF PHILADELPHIA, PENNSYLVANIA.

*Letters Patent No. 63,407, dated April 2, 1867; antedated February 26, 1867.*

## IMPROVEMENT IN MACHINES FOR SHARPENING SAWS.

*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, THOMAS T. MARKLAND, Jr., of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Machines for Sharpening the Teeth of Saws; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in a machine for sharpening saws by the use of an emery or other wheel, which is adjustable to give the required angle to the teeth, right and left, in connection with a reversible portable rest, varied to suit any angle of the edges of the teeth, or to sharpen them square.

The construction and operation of the machine will be understood by the following description. In the accompanying drawings—

Figure 1 is an end elevation of the improved machine.

Figure 2 is a side elevation of the same.

Figure 3 is a top view or plan of ditto.

Figure 4 is a plan of the extension rotary rest D.

Figure 5 is an edge view of the same.

Figure 6 is a reversed plan of ditto.

Figure 7 is a plan of the sliding rest P, to be used in sharpening straight saws, having a saw in connection.

Figure 8 is an end view of ditto.

Like letters in all the figures indicate the same parts.

A is an ordinary bench for holding the several parts of the apparatus. B is a reversible and portable rest, which is supported by the standard C, there being a longitudinal slot, *a*, in the top of the bench to receive the tenon *b* of the standard, and to provide for the shifting of the latter to regulate the distance of the rest from the grinding-wheel, hereinafter described, to suit saws of different sizes. D is a rotary clamping-disk, to be used in sharpening circular saws. It has a central shaft, *c*, firmly secured therein, and projecting through the clamping-plate E, which is confined upon the saw F by means of the key *d*. The said shaft *c* also projects downwards, and fits in a hole in the rest B, in which it revolves as the saw is shifted for sharpening. The clamping-disk D has extension arms *e*, adjustable by means of the screws *f* and slots *g*, as seen in figs. 4, 5, and 6, so as to regulate the disk for saws of various sizes. The upward projecting part of the shaft *c* is made the size of the eye of the smallest saws, and is enlarged by means of thimbles to suit larger eyes. For the purpose of turning the rest B to various angles to give the various bevels which may be desired to the edges of the teeth of the saws used for cross-cutting, it has a joint connection with the standard C by means of the pin *h*, which passes through the cheeks *i i*, that project from the lower side of the rest, and through the standard. There are set-screws *j j* in the arms *k k* of the standard, for adjusting the rest to the various angles. When the teeth of the saws are to be sharpened square across, the screws are brought up tight to the rest when the latter is brought into a horizontal position for that purpose, as represented in figs. 1 and 2. For holding the saw in position, so that it shall not shift either way while being filed, there is a finger, *l*, on the strip G, the said strip having a slot, *m*, for its adjustment, and being confined to the front edge of the bed-plate by means of the screw *n*, as seen in fig. 1. H is an emery-wheel, for grinding the teeth of the saws. It is removable from its shaft I by means of the screw boss clamp *o*, so as to change the wheel for others in accommodation to the saws, the edges of the wheels being made of such shape as to correspond to the notches or serrations, which give shape to the teeth. The said shaft I is hung on centres *p p*, in the arms *q q*, which project upward from the shaft J. The said shaft turns partially on the centre-pins *r r*, in the jaws *s s* of the swivel-plate K, so that the wheel H may be shifted in and out of the serrations, there being a handle, *t*, projecting from one of the arms *q* for that purpose. By means of the set-screws *u u*, in the cheeks *r r* of one of the jaws *s*, the inward and outward motions of the wheel H are regulated. The swivel-plate K is adjustable on the screw-bolt *w*. The latter is screwed hard upon the plate to hold it securely in position. There may be adjustable stops, consisting of pins, placed in holes in the top of the bench A, or set-screws, or other simple device, to take the strain off the bolt. When the teeth have equal angles each way the swivel may be set square across the bench. This may be done, also, when the teeth have unequal angles, as represented in the drawings, by making the edge of



the grinding-wheel to correspond. L is a driving-pulley on the shaft I. For the double purpose of blowing the dust from the teeth of the saws, and for creating a current of air, as the shaft I revolves, to keep the teeth cool, I place fans *x* on the movable and standing bosses *o* and *o'*. As auxiliary to the fans I place a lump of ice, M, in the pan N, for cooling the air before it is taken up by the fans. In figs. 7 and 8, O represents a straight saw. P is a dove-tailed rest, which slides in the female dove-tail *y* across the rest B, to bring the teeth of the saw in succession into connection with the grinding-wheel H, the rotary clamping-disk D, and clamping-plate E, as well as the dove-tail plate Q, which is merely placed in position to fill up the space for more efficiently clamping circular saws, having been removed. R is a clamping-plate, for securing the saw on the rest. S S S are the clamps. There may be a number of holes in the plate Q, across the middle, ranging with the centre hole, through which the lower projection of the shaft *c* passes, for the adjustment of saws of different sizes, so as to obviate the necessity of giving much variation to the extension arms *e*. There must, in this case, be corresponding holes in the rest B. I true the edge of the emery-wheel H, or bring it into the proper shape, by means of a hot tool or bar of iron or copper. To give increased expedition to sharpening straight saws there may be placed a plurality of grinding-wheels, H, so as to sharpen several teeth at one operation; or there may be several cutting edges to the wheel instead of one, as represented in the drawings.

What I claim as my invention, is—

1. A reversible and portable rest, B, connected with the standard C, adjusted by means of the set-screws *j j*, and arranged and operating substantially as described and for the purpose specified.
2. The clamping-disk D and clamping-plate E, when arranged in relation to the rest B and saw F, substantially as and for the purpose set forth.
3. The combination of the clamping-board P with the rest B, operating substantially as described and for the purpose specified.
4. The combination of the shaft J, having arms *q q*, with the swivel-plate K, the said arms being adjusted by the set-screws *u u*, substantially as described and for the purpose specified.
5. The slotted finger or catch-strip G, when arranged and operating in relation to the saws F and O, substantially as described.
6. The fans *x*, arranged in relation to the emery-wheel H, substantially in the manner described and for the purpose specified.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal this fourteenth day of January, 1867.

THOS. T. MARKLAND, JR. [L. S.]

Witnesses:

STEPHEN USTICK,  
JOHN WHITE.