

S. E. FARMER.
 Apparatus for Hardening and Tempering Saws.

No. 199,968.

Patented Feb. 5, 1878.

Fig. 1.

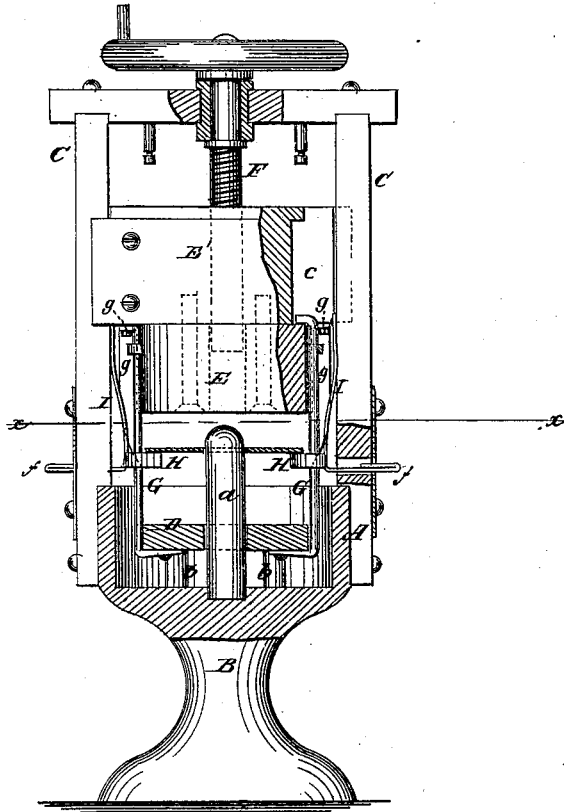
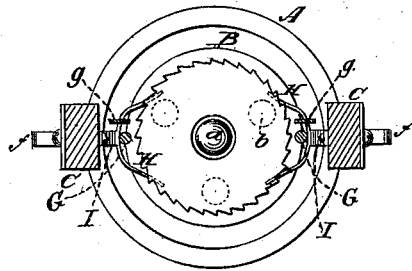


Fig. 2.



WITNESSES:

Francis McAule.
J. H. Scarborough.

INVENTOR:

S. E. Farmer.
 BY *Wm. J. [Signature]*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SILAS E. FARMER, OF DAYTON, OHIO, ASSIGNOR TO HIMSELF AND ALVAN A. SIMONDS, OF SAME PLACE.

IMPROVEMENT IN APPARATUS FOR HARDENING AND TEMPERING SAWS.

Specification forming part of Letters Patent No. **199,968**, dated February 5, 1878; application filed June 11, 1877.

To all whom it may concern:

Be it known that I, SILAS E. FARMER, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Apparatus for Hardening and Tempering Saws, of which the following is a specification:

The invention consists, first, in combining, with a vertically-movable anvil or press-bed, a vertically-movable follower and automatically-releasing saw-supports, whereby a saw will be dropped into the bath at the proper time during the descending stroke of the follower, and centered upon the said press-bed, as will be hereinafter described; secondly, in seating the press-bed upon posts in the bath-tub, for the purpose of allowing scales to fall upon the bottom of the tub, free from the press-bed, without destroying its tension with respect to the follower, as will be hereinafter described.

In the annexed drawings, Figure 1 is an elevation of my improved machine, partly in section. Fig. 2 is a section through Fig. 1, taken in the plane indicated by dotted line *xx*.

Similar letters of reference indicate corresponding parts.

A designates the bath-tub, of suitable shape and capacity, which may be mounted on a pedestal, B, as shown in the drawings, and which is constructed with an upright frame, C, strongly secured to it.

Inside of the tub A is a cylindrical press-bed, D, which is free to rise and descend on a centering-post, *a*. This bed is of less diameter than the interior of the tub A, and it is mounted on blocks *b*, so that scales, &c., falling from the saws during the tempering and hardening process will fall upon the bottom of the tub, and not affect the tension of the bed.

E designates a cylindrical follower, which is centrally perforated to receive the post *a*, and which is rigidly secured to a grooved cross-head, E', vertically movable in the frame C by means of a screw, F. The bottom face of the follower E and the top face of the bed D should be exactly parallel to each other.

G G are two lifting-rods, which are arranged directly opposite each other, and secured to the bottom of the bed D. These rods extend up through guides fixed on opposite sides of the follower E, and their upper hooked ends are free to play in grooves *cc*, made in the ends of cross-head E'.

By these means the press-bed D will be lifted out of the bath, during the ascent of the follower, in a position to conveniently remove a saw. During the descent of the follower the bed D will descend and rest upon the blocks *b*.

In a plane above the bed D, when it is at its highest point, are curved fingers H H, which are secured to spring-arms I I, having spring-latches *ff*, applied to frame C. These fingers H H are designed to support a saw above the bath during part of the descending stroke of the follower, and at the proper time they are pressed outward by wedges *gg*, fixed to cross-head E', allowing the saw to drop upon the bed D in the bath. After this the follower completes its descending stroke and acts on the saw, finishing it at one operation and at one heat.

By my machine I straighten the saws at the same time that I harden them, and I leave them of the desired temper and form without straining.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A bed, D, which is mounted on blocks *b* in a bath-tub, A, and which is vertically movable, and centered by a post, *a*, in combination with the follower E and lifting-rods G G, substantially in the manner and for the purposes described.

2. The spring-fingers or saw-supports H H and tripping-wedges *gg*, in combination with the bed D and follower E, arranged and operating substantially as described.

SILAS EPHRAIM FARMER.

Witnesses:

JOHN HOWARD,
T. C. ROSEBERRY.