(No Model.)

J. H. MINER.

SAW SWAGE.

No. 381,633. Patented Apr. 24, 1888.

Fig. 4.

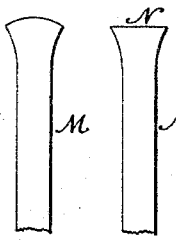


Fig. 5.

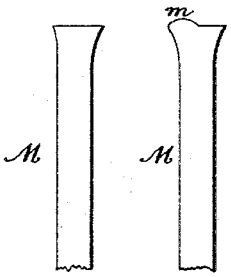


Fig. 1.

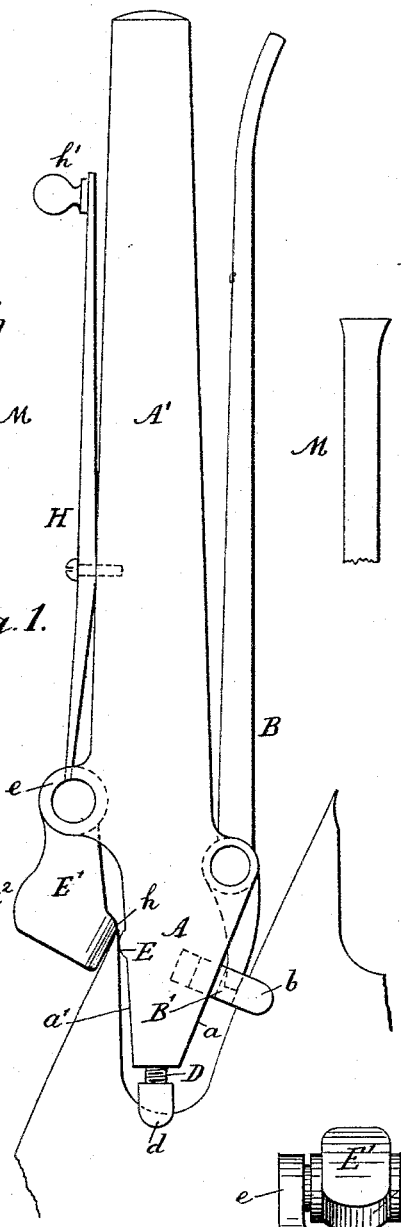


Fig. 2.

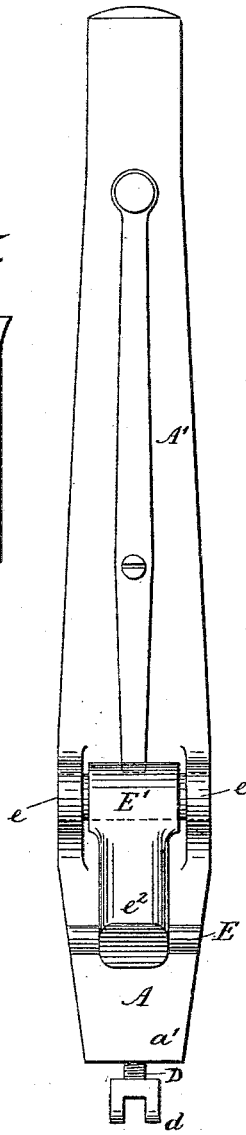
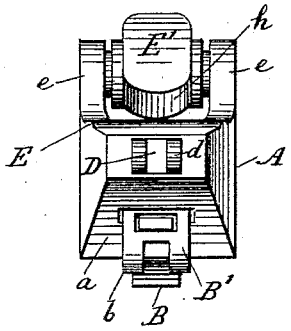


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES H. MINER, OF BATON ROUGE, LOUISIANA.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 381,633, dated April 24, 1888.

Application filed June 29, 1887. Serial No. 242,870. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. MINER, of Baton Rouge, in the parish of East Baton Rouge and State of Louisiana, have invented a new and Improved Saw-Swage, of which the following is a full, clear, and exact description.

My invention relates to an improvement in saw-swages, and has for its object to swage or draw out the steel by hammering the same, whereby the steel is improved and toughened; and also to provide a means of swaging teeth of varied thickness, and operating upon said teeth at any desired point in their width.

The invention consists in providing a saw-swage with an adjustable die or former, and in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the swage applied to a tooth. Fig. 2 is a front elevation of the same. Fig. 3 is a bottom plan view, and Figs. 4 and 5 are front elevations of teeth treated with my swage.

In carrying out the invention the body A of the swage is provided with a handle, A′, integral with the upper end. The rear side, *a*, of the body is made to taper or incline inward from the top, the front side, *a′*, being straight and the bottom flat and narrow. In the rear of the body, at the top where it joins the handle, a recess is provided, and in said recess a lever, B, is pivoted, the upper end of which is adapted to extend outward parallel with and nearly to the end of the handle A′, the lower short end of said lever being adapted to enter a slot formed in a pin, B′, which pin is held to slide in an aperture formed in the rear inclined edge of the body, as shown in Fig. 1, and provided at its outer extremity with a slotted or forked end, *b*, adapted to engage the front end of the tooth, as also shown in Fig. 1. In the bottom of the body, centrally the same, a set-screw, D, is entered, provided with a slotted or forked outer end, *d*, adapted to bear upon the root or base of the tooth. The swage by this means may be used with equal ease upon long or short teeth. About centrally the front or straight side, *a′*, of the body a transverse convex projection is produced, arranged to extend from side to side, which projection constitutes the under die or former, E, of the swage.

Above the die E, in the front of the swage, ears *e* are formed, in which the upper die or former, E′, is pivoted to have lateral play between said ears. The die E′ is so hung as that its under surface, *h*, which is decidedly convex, will strike the edge of the tooth opposite the lower die, E, and the said upper die has sufficient lateral play to admit of the apex of the convexity being brought in contact with the tooth at any point in its width.

The lateral movement of the upper die is effected by one end of a lever, H, fulcrumed upon the handle A at the front, entering a slot in the upper edge of the said die E. The upper end of the lever projecting upward, parallel with the handle, is provided with a knob, *h′*. The outer face, e^2, of the die E′, in alignment with the convex or forming surface *h*, is made more or less flat, and is adapted to receive a blow in process of swaging from a hammer or similar instrument.

In operation the forks of the set-screw D, after having been properly set, are made to embrace the saw-tooth at the base, the under die, E, registering with the under end surface of the tooth to be swaged. The handle A′ is now grasped with the left hand, which also encompasses the upper end of the lever B, and by pressing upon said lever the forked end of the pin B′ is made to engage the front edge of the opposing tooth and wedge the die E firmly in position, as shown in Fig. 1. By manipulating the knob *h′* with the thumb of the left hand the upper die may be brought to bear against the tooth at any desired point. When this is effected, a blow with a hammer or similar instrument is given the die E′, and the operation is repeated until the tooth is completely swaged.

It is obvious that by means of the shifting upper die the tooth may be treated with greater force at one point than another—as, for instance, should one edge of the tooth by contact with a nail be nicked or otherwise damaged, that point alone may be treated as shown in the tooth M at *m* to the right in Fig. 5, which,

after filing, will appear as shown to the left in same figure. Teeth of different length and thickness may be readily operated upon, the adjustability of the parts allowing accommodation thereto.

In Fig. 4 the tooth M is shown as swaged. It is obvious that by a few light strokes of the file the curved surface is brought down to a straight line, as shown at N to the right.

Instead of the screw D, a spring-encircled smooth shank may be entered the lower portion of the body A, by means of which a greater or less amount of the tooth may be operated upon and the swage used on teeth of different length without adjustment by varying the pressure upon the handle A.

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

1. In a saw-swage, the combination, with the body portion, of a steadying-pin having a forked end, and a screw-threaded shank fitting in a screw-threaded socket of the body portion, substantially as described.

2. In a saw-swage, the combination, with a recessed body portion, of a pin fitting in the recess of the body portion and provided with a forked outer end, and a pivoted lever engaging said pin, substantially as herein shown and described.

3. In a saw swage, the combination, with the body portion A, formed with the under die, E, of the upper die pivoted to the body portion to have lateral play, and the lever H, for moving the said die laterally, substantially as herein shown and described.

4. The combination, with the body A and handle A′, a pin, B′, adapted to slide in the rear edge of said body, having a forked outer end, a lever, B, operating said pin, and a convex die, E, formed transversely the front face of said body, of an adjustable upper die, E′, having a convex inner surface, and means for manipulating said die, substantially as shown and described.

5. The combination, with the body A and handle A′, a pin, B′, adapted to slide in the rear edge of the body, having a forked outer end, a lever, B, operating said pin, and a convex die, E, formed transversely the front face of said body, of an adjustable upper die, E′, having a convex inner surface, means for manipulating said die, and a set-screw, D, having a forked outer end adapted to elevate or depress the body, all arranged to operate substantially as shown and described.

JAMES H. MINER.

Witnesses:
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CHARLES MCVEA.