W. Clemson,

Saw Swage.

No. 101,099. Patented Mar. 22. 1870.

Fig. 1.

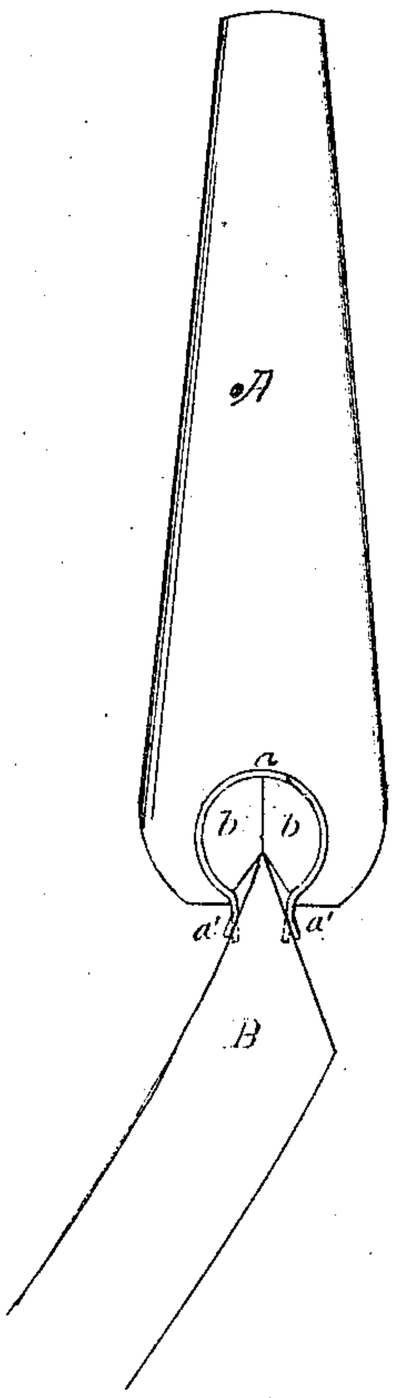


Fig. 2.

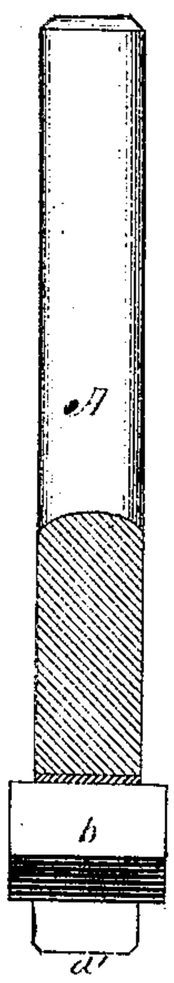
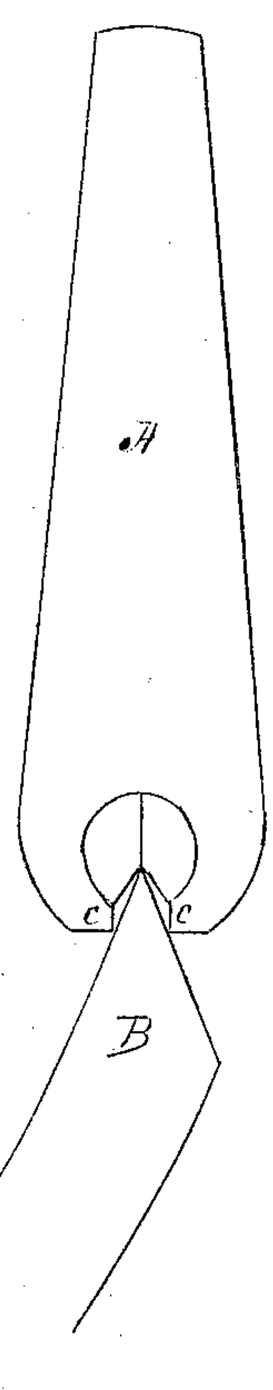


Fig. 3.



Witnesses:

Isaac D. Sailer

R. H. Whittlesey

Inventor:

William Clemson

By his attorney N. Crawford

United States Patent Office.

WILLIAM CLEMSON, OF MIDDLETOWN, NEW YORK.

Letters Patent No. 101,099, *dated March* 22, 1870.

IMPROVEMENT IN SAW-SWAGES.

The Schedule referred to in these Letters Patent and making part of the same

To whom it may concern:

Be it known that I, WILLIAM CLEMSON, of Middletown, in the county of Orange, in the State of New York, have invented certain useful Improvements in Swages for Upsetting or Swaging the Points of Saw-Teeth, of which the following is the specification.

In the drawings—

Figure 1 is a side view of the improved swage;

Figure 2 is an edge view of the same; and

Figure 3 represents another or modified form of swage.

In keeping the teeth of saws in the proper shape, and especially so with teeth that are insertable, it is necessary to occasionally spread or upset the cutting edges of the teeth, so as to keep them of the proper width, and so that the teeth shall cut a kerf wide enough to free the saw-plate from danger of being heated, in consequence of the friction of the plate upon the sides of the kerf, and to do this successfully a proper swage or tool for upsetting or spreading the cutting edges of teeth is employed.

When this swage is properly placed upon the points or cutting edges of the teeth, a blow is struck upon the other end of said swage by a hammer, hard enough to accomplish the desired result, or it may require a series of blows by the hammer upon the swage to give the proper shape to the tooth, and an experienced operator would always place the swage correctly upon and in the right direction with the two angles of the tooth, when the force of the blow given by the hammer would effectually produce the result desired; but saws sometimes go into the control of persons who are not experts in this method of keeping the saw-teeth in proper shape; hence, with a common swage, and the swage struck by a hammer, the percussive force and direction of which is not in the proper line, there is danger of breaking off the points of the teeth, or, if not broken, some may be bent in one direction and others in the other direction, much to the injury of the saw, and, in order to avoid this liability of breaking off or improperly bending or upsetting the edges of the teeth, is the object of this invention; and

It consists in the inserting in the swage and around the upsetting-dies of elastic or spring guides, that will, as the swage is placed upon the point of a tooth and a blow given by a hammer upon the swage, guide the point of the tooth to the upsetting-dies in the right position, even provided the tool does not have the exact position with relation to the sides of the tooth, or the direction of the percussive force of the blow may not be in the proper line upon the swage, as the spring guides will have the effect to give the proper direction to the tool upon the tooth, and neutralize the effect of a misdirected blow of the hammer upon the swage or tool.

A is the body of the swage, constructed nearly in the usual form, and having the transverse hole near its end to receive the spring *a*, having the projecting lips *a'*, and encircling the upset-dies *b b*.

The hole which receives the dies and spring is cut out to the end of the swage, so that the spring lips *a'* will project a sufficient distance from the end of the swage to have the proper elasticity to give the direction of the swage upon the saw-tooth, when the blow is given by the hammer.

These spring guide-lips *a' a'* enable the operator to place the swage and give the blow with the hammer, and have the effect of such blow uniformly produced upon each tooth that is upset, and the same swage, by means of these spring lips or guides, can be used upon saw-teeth having different or varying angles at their points, which is not the case with a swage without such springs lips; as, for instance, the swage shown in fig. 3 can only be used on teeth having a limited width, as the jaws *c c* are inflexible, and cannot expand to receive the points of teeth wider than the opening between the jaws *c c*, as can be done in the improved swage as seen in fig. 1, where it shows the guide-lips sprung apart to receive a tooth wider than the projecting points of the lips *a' a'* are apart, when not forced asunder by the tooth.

The swaging-dies *b b* are adjustable, and can be varied with relation to the opening or jaws of the swage, which will allow of every variety of teeth having different angles at their points, to be operated upon by the same swage.

This swage is easy of construction, only requiring a short piece of spring steel of the proper width to be placed in the lateral hole, and surrounding the upsetting dies, and projecting, far enough to form the lips or guides, over the common swage with upsetting dies, and is as strong as the ordinary swage, is sure to always produce the result desired, which is to expand the tooth in width at its extreme point, while the tooth is made a little thicker a short distance from the point, by reason that the angle of the faces of the upsetting-dies is more obtuse than the point of the tooth before it is upset; hence the tooth is spread in width, and then the extra thickness of the tooth afterward reduced to its original angle and shape.

Having thus described by invention,

What I claim, and desire to secure by Letters Patent, is—

1. The spring lip-guides *a' a'*, when attached to and forming a part of swage A, constructed and arranged to operate in the manner as described.

2. The saw-swage herein described, composed of the body A, spring *a* having elastic lips *a' a'*, and adjustable upset-dies *b b*, constructed to operate in the manner and for the purpose set forth.

WILLIAM CLEMSON.

Witnesses:

ELISHA P. WHEELER,

EDWARD MADDEN.