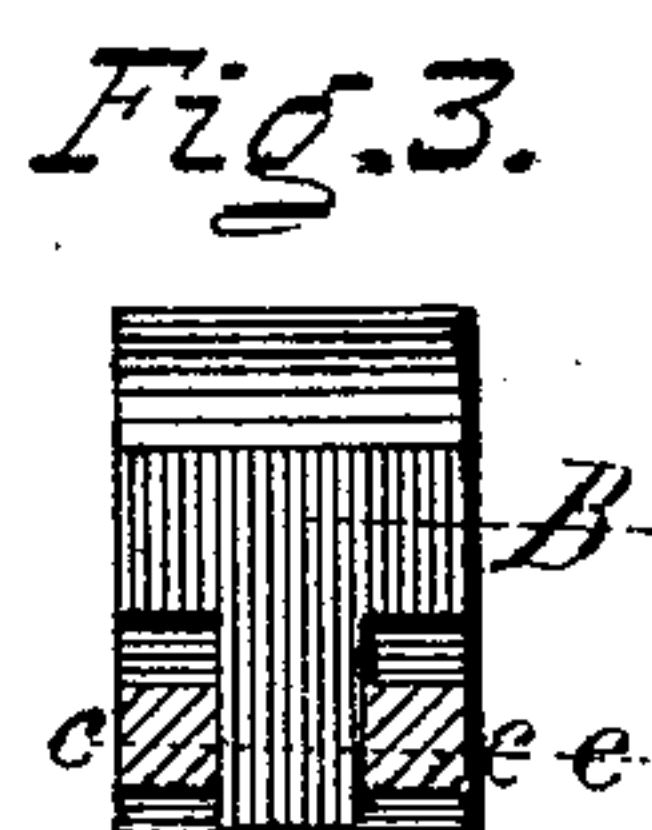
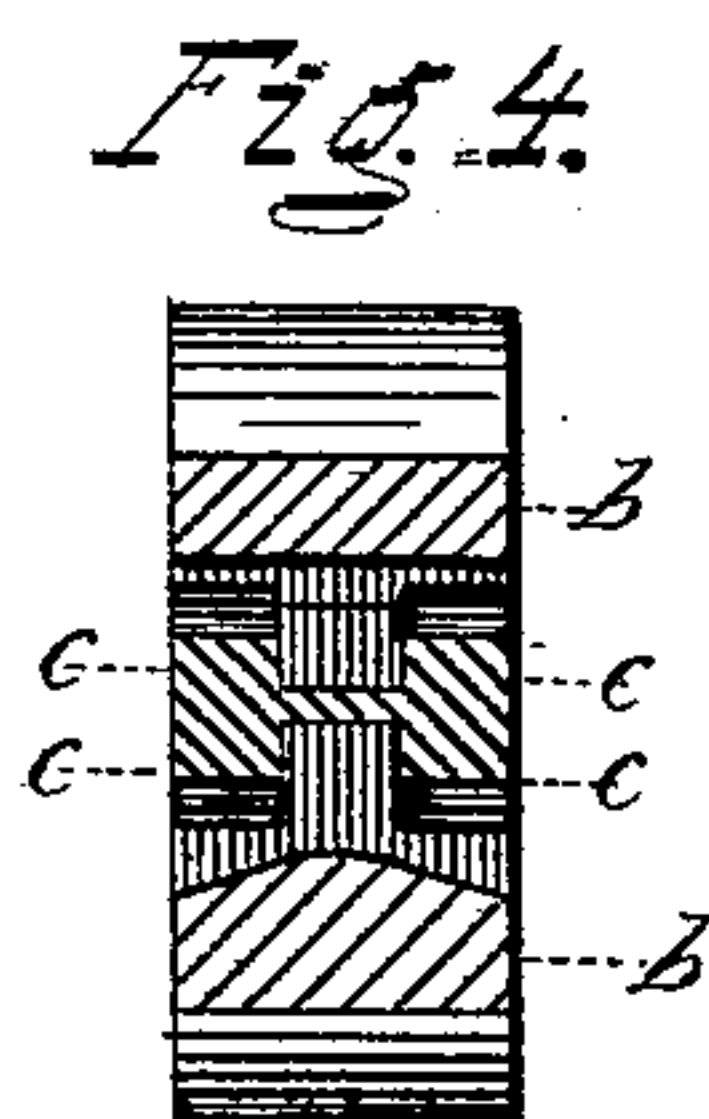
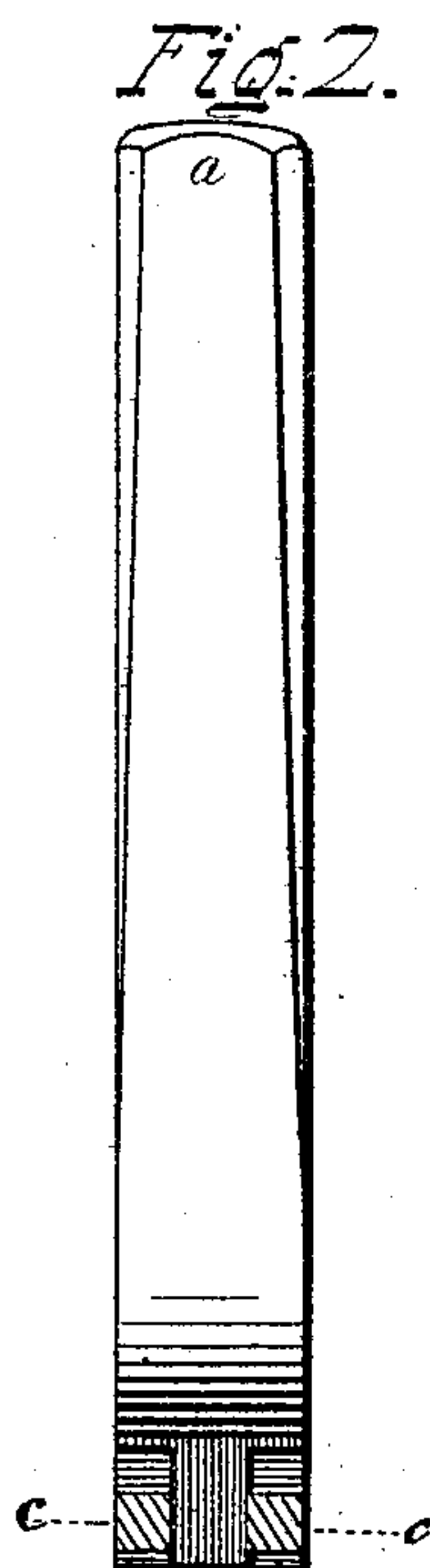
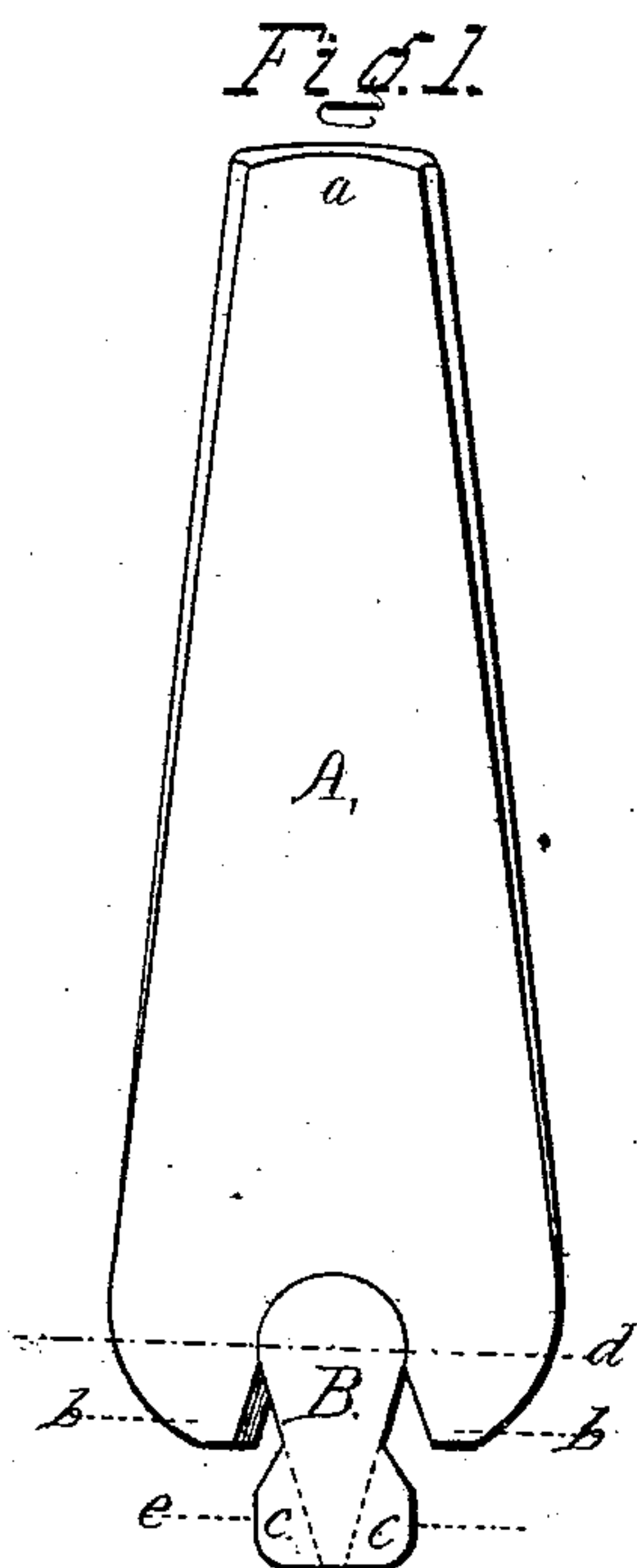


I. S. BROWN, C. N. BROWN & J. R. WHEELER.

Improvement in Saw-Swage.

No. 127,457.

Patented June 4, 1872.



Witnesses.

J. Mason Grass  
N. W. Wilbur

Inventors.

Cha S. Brown  
Charles N. Brown  
Jas. R. Wheeler

# UNITED STATES PATENT OFFICE.

IRA S. BROWN, CHARLES N. BROWN, AND JAMES R. WHEELER, OF PROVIDENCE, RHODE ISLAND, ASSIGNORS TO PROVIDENCE SAW COMPANY, OF SAME PLACE.

## IMPROVEMENT IN SAW-SWAGES.

Specification forming part of Letters Patent No. 127,457, dated June 4, 1872.

### SPECIFICATION.

We, IRA S. BROWN, CHARLES N. BROWN, and JAMES R. WHEELER, all of the city and county of Providence and State of Rhode Island, have invented a certain new and Improved Saw-Swage, of which the following is a specification:

#### *Nature and Objects of Invention.*

Our invention consists in constructing a saw-swage, of cast steel or material most desirable, in such a manner that it will afford two dies differing in form, as may be desirable, for spreading and sharpening the points of saw-teeth with combined flanges or projections made permanently upon each side of the outer portion of the center-piece of the swage for the purpose of preventing lateral displacement while operating, being ready for use successively by turning the swage in the hand, no alteration or adjustment being needful.

Figure 1 is a side elevation of our swage ready for use. Fig. 2 is an edge view of the same. Fig. 3 is a side view of the center-piece detached. Fig. 4 is an end view of our swage with center-piece inserted.

#### *General Description.*

A is the body of the swage, which should be made of the best cast-steel and hardened at *a*; also the lips *b b*, which, in combination with the center-piece B, form the dies, should be hardened to the dotted line *d* to prevent them from wearing by use. One of the lips *b* should be formed with a convex surface on the die portion, as seen in Fig. 4, so that by placing this lip upon the under side of the teeth they may be spread more rapidly than by a flat die; but the other lip *b* should be made flat or nearly so to bring out the corners fully and sharp after using the convex die. The rounded lip or die should be made of a curve suited to the gauge of the teeth to be swaged as it is obvious that a tooth of thin gauge requires a much sharper curve than one that is very thick to produce a proportionate effect upon the tooth swaged.

The center-piece B should be well fitted and driven tightly into the body of the swage. It should also be made of the best cast-steel, and of the needful taper to cause the force

of the blow upon the swage to move the steel backward in a direct line with the top of the tooth swaged.

When finished this center-piece must be hardened from the thick end to the dotted line *e*, leaving the thin portion of the wedge without temper to avoid breaking.

In Fig. 3 *c c* are the combined flanges upon the corners of the outer portion of the wedge-shaped center-piece, and should be made a sufficient distance apart to allow perfect freedom in turning the swage to the right or left upon the tooth to bring out either corner that may be desired.

In operating our swage, the center-piece B must be placed upon the top of the tooth and pressed backward firmly, taking a bearing the whole length of the taper, thus forming a support for the swage while it acts upon the points correctly.

The convex die should be used upon all teeth which require much swaging, but the corners should be finished with the flat die to give a perfect edge.

We are aware that swages have been made with V-dies of various forms with adjustable gauges attached to prevent lateral displacement, which, by adjustment at each time of using, are made to accomplish a similar result to that obtained by using our improved swage; but we have no knowledge of any having been made possessing the same improvements that are herein described, or advantages equivalent to those of our swage in simplicity of construction and operation and durability under continued use in the hands of all classes of saw operators.

#### *Claim.*

We claim as our invention—

A saw-swage, with two dies with combined flanges made permanently upon the center-piece of the swage, ready for use without adjustment, substantially as herein described, for the purpose set forth.

IRA S. BROWN.  
CHARLES N. BROWN.  
JAS. R. WHEELER.

Witnesses:

I. MASON GROSS,  
N. W. WILLIAMS.