

(Model.)

G. F. SIMONDS.

Saw Swage.

No. 238,062.

Patented Feb. 22, 1881.

Fig. 1.

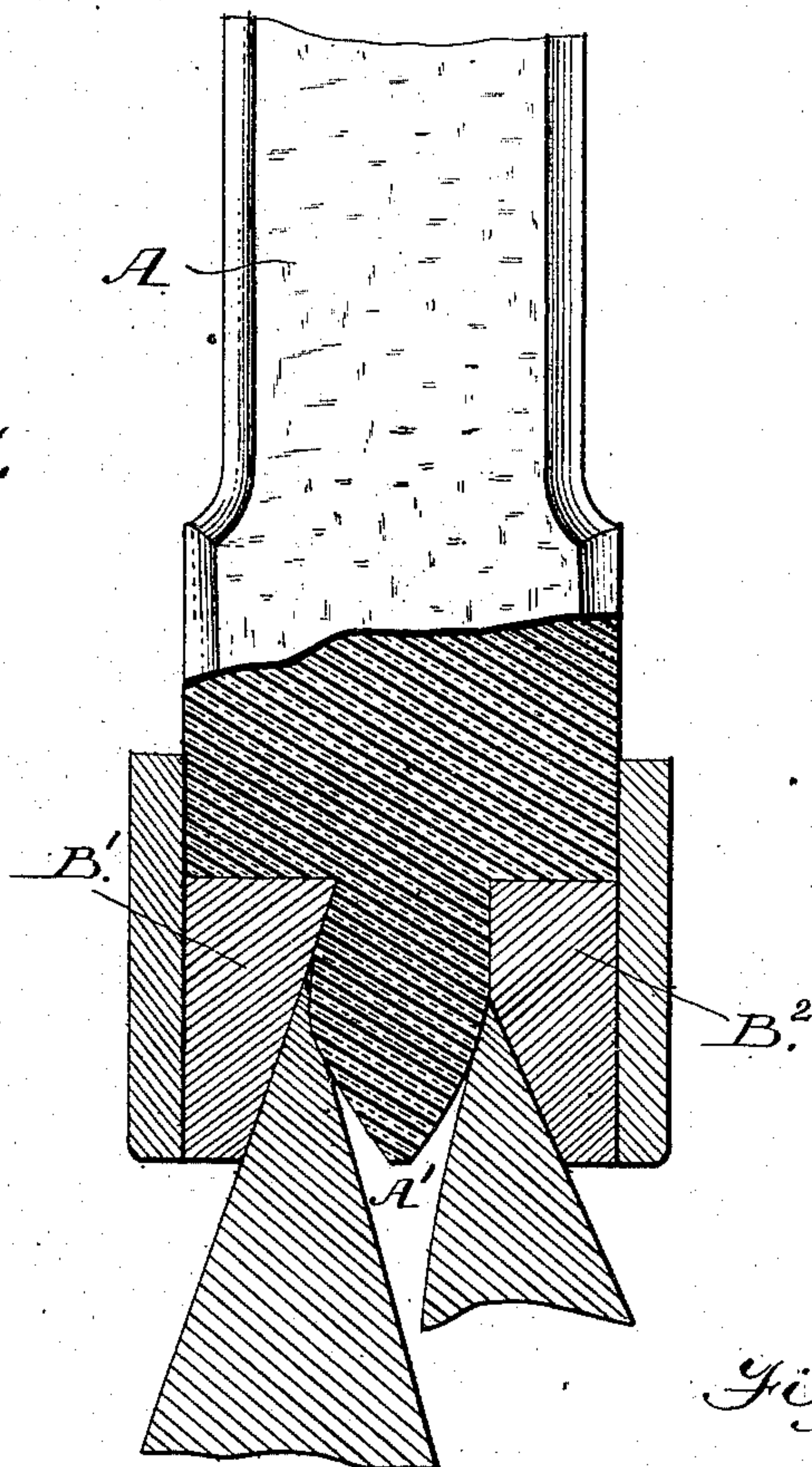


Fig. 2.

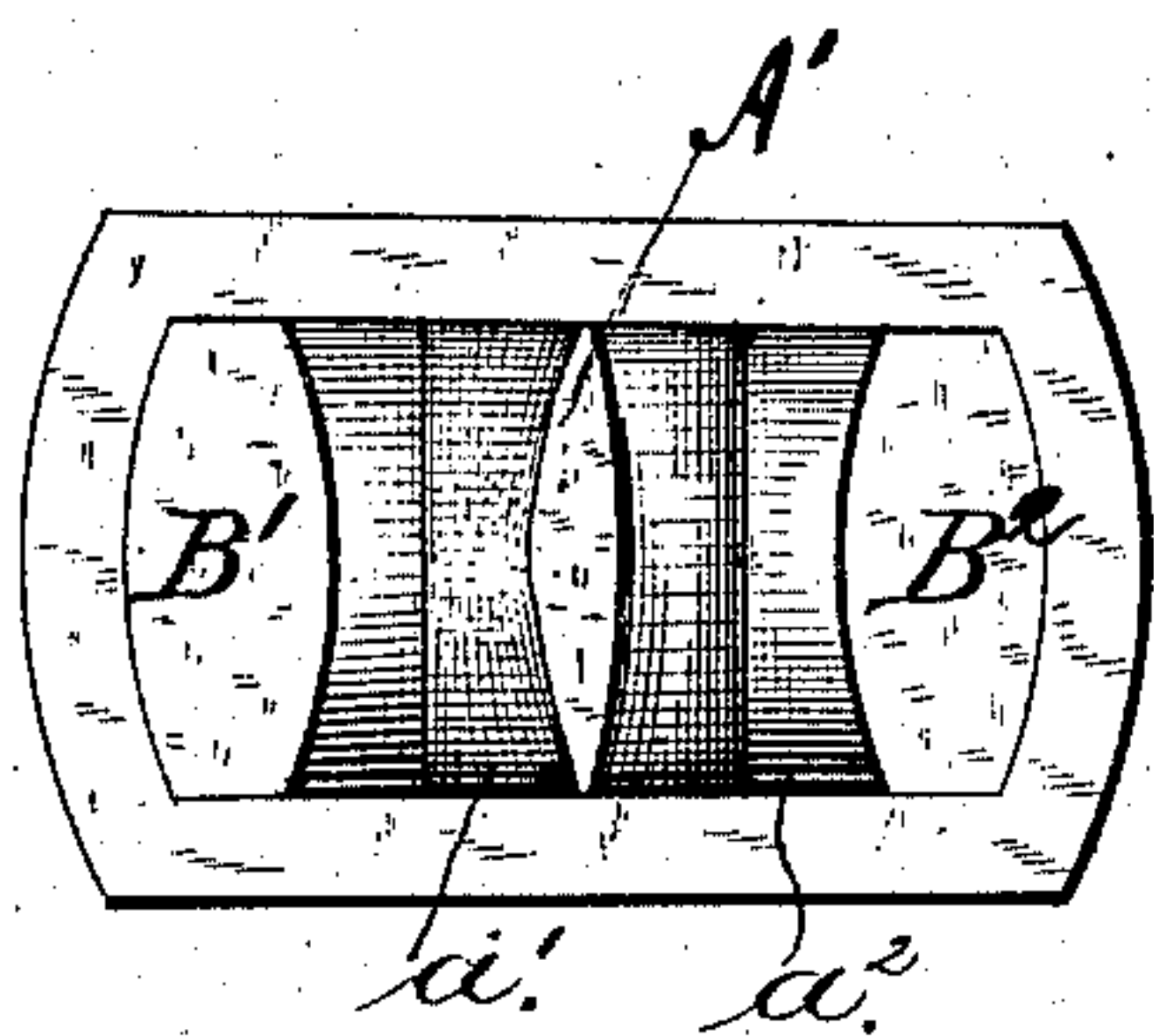
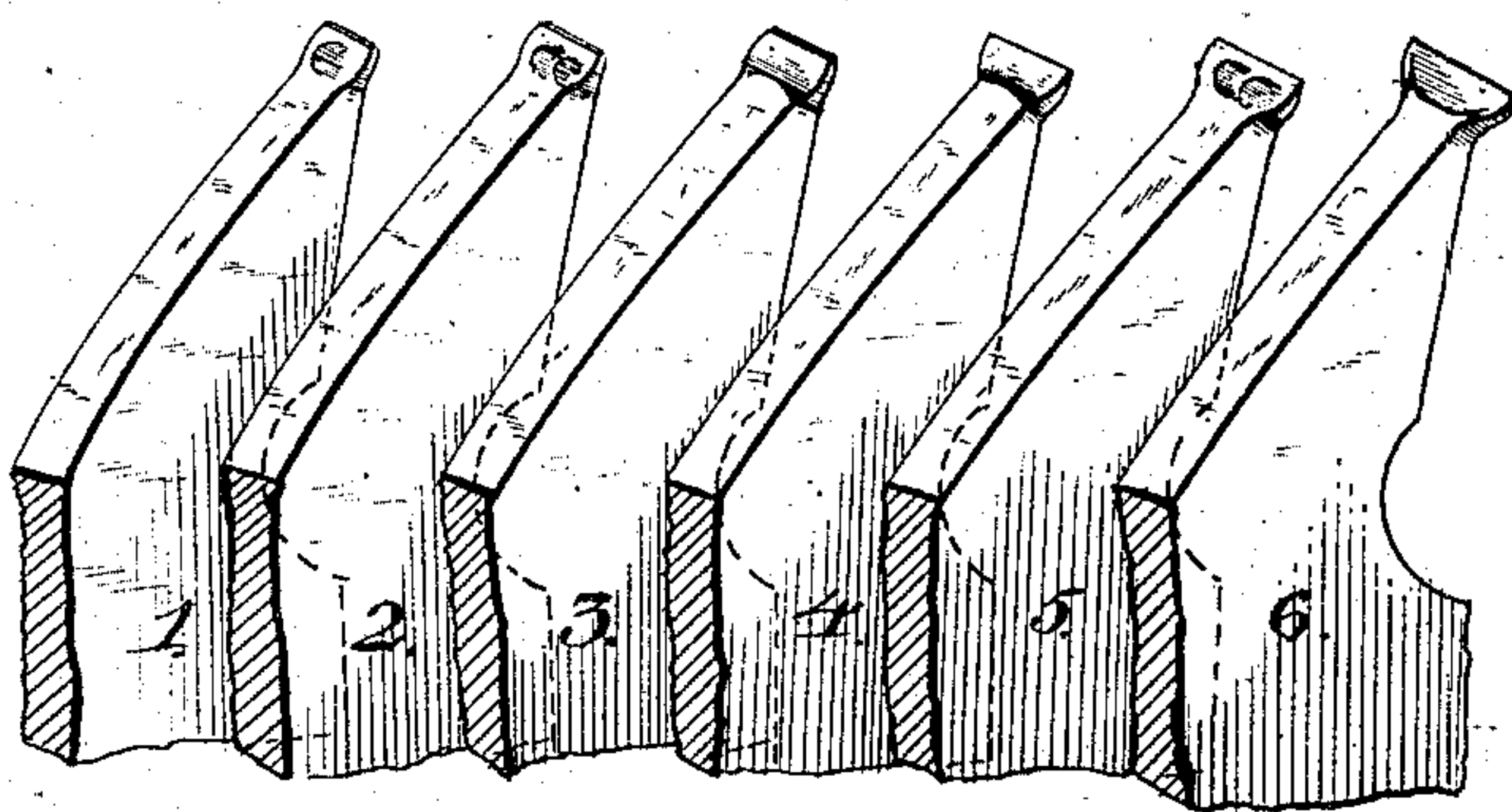


Fig. 3.



Witnesses:

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SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 238,062, dated February 22, 1881.

Application filed November 22, 1880. (Model.)

To all whom it may concern:

Be it known that I, GEORGE F. SIMONDS, of Fitchburg, Massachusetts, have invented a new and useful Improvement in Swages for Spreading and Sharpening Saw-Teeth, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a vertical section of a swage with my improvements attached. Fig. 2 represents a bottom plan; Fig. 3, details referred to.

The object of my invention is to spread saw-teeth to a proper width and give them requisite strength without materially taking from the length of the teeth or setting back the metal; and my invention consists in forming a swage with two recesses and with swage-teeth of peculiar shape, one face of the swage, when driven upon a tooth, acting upon the lateral or horizontal center of the tooth back of its cutting-edge, and spreading the tooth first from its center, without materially effecting the point or edge, while the other face spreads horizontally the edge of the tooth and that part lying between the edge and the part acted upon by the other face.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A is a piece of steel shaped to be held by the hand and to receive the blows of a hammer upon the upper end, while at the lower end it is provided with three swage-teeth, A', B', and B². I show the central tooth, A', rigid and the teeth B' B² removable; but it is evident that the central tooth may be made removable and the other two rigid, as both forms are in common use. Between the central and the outside teeth are formed two recesses, a' and a², into which recesses the saw-teeth are introduced for the purpose of swaging.

The acting faces of the teeth B' and B² operate upon the under part of the saw-teeth, and do little more than furnish a back or resisting-bed for the saw-tooth, the swaging of which is substantially performed by the two operating faces of the central swage-tooth, A'. The faces, therefore, of the teeth B' and B² are straight,

substantially, but may be slightly curved in the direction of their width.

The central swage-tooth, A', has a double curve on each of its faces, the one horizontal and the other vertical or longitudinal; but the face next the recess a' has much more of a curve in both directions than the other, as shown in Figs. 1 and 2. The greater curve is opposite the swage-tooth B' and recess a'. It is into this recess a' that the saw-tooth is first inserted to be operated on by the swage, and it will be seen, by reference to Fig. 1, that the face of the central swage-tooth, A', so retreats near its base that the projection formed by the double curves upon the face of the tooth first impinges on the saw-tooth at a point back of the cutting-edge. Owing to the double curve which I give this face, as illustrated in Figs. 1 and 2, the point of the projection resulting from the curves is centrally located as regards the width of the face, and back of the point reached by the cutting edge of the saw-tooth when the swage is caused to impinge on the tooth, as shown in Fig. 1. The other acting face of the central swage-tooth, A', is shaped, as shown in Fig. 1, to operate not only on the part of the saw-tooth already acted on while in recess a', but also on the rest of the tooth down to the cutting-edge. The longitudinal or vertical curve of this face of the central tooth is, however, slight for such a distance from its junction with tooth B², as it is designed to act upon the tooth of the saw to give it the form required in swaging, and then this curve is more sharp or falls back, so that it may cease to act upon the saw-teeth. By this construction the swage is adapted to be used on saw-teeth having quite a range of angles.

In the operation of swaging or spreading the saw-teeth the swage is moved from side to side until the swaging is complete.

In order the more clearly to demonstrate the operation of my swage, I refer to Fig. 3 of the drawings, in which the teeth represent the consecutive steps taken in spreading saw-teeth. No. 1 having received its first blow in recess a', No. 2 shows the same tooth having received two blows of the swage in recess a'. No. 3 shows the same tooth having a succession of blows to the right and left in recess a'. No. 4

shows the same tooth with swaging finished up in recess a^2 . Again, to demonstrate the action of my double-curved-face swage, I subjected No. 4 the second time to the action of the swage in recess a' , and produced No. 5, and again finished it up in recess a^2 , as shown in Fig. 6.

I am aware that it is not broadly new to swage the saw-tooth back of the cutting-edge; but in swages heretofore used the pressure was simultaneously applied entirely across the surface of the tooth, while my swage impinges only upon a small portion of lateral surface at a time; and by this means I am enabled to commence the spreading process from a central point in the cross-line back of the cutting-edge and work it gradually each way from that central point to the outer lines, and thus avoid all danger of fracturing the metal.

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

1. A swage for saw-teeth constructed as described, and consisting of a central tooth, A' ,

provided with a double curve upon each of its operating faces, one curve horizontal and the other vertical or longitudinal, the one face having shorter curves than the other, in combination with side pieces, $B' B^2$, all constructed to operate substantially as set forth.

2. The swage-tooth A' , provided with a double-curved operating face, and having a central projection to operate upon the saw-tooth at its center and back from its cutting-edge, substantially as and for the purpose set forth.

3. The process herein described for swaging saw-teeth, consisting of first indenting the longitudinal center of the tooth back from the edge, next in spreading the tooth by successive blows to right and left of center, and then in finishing or dressing up the tooth, substantially as herein described.

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Witnesses:

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