

(Model.)

N. JOHNSON.
Saw Swage.

No. 242,935.

Patented June 14, 1881.

Fig 1.

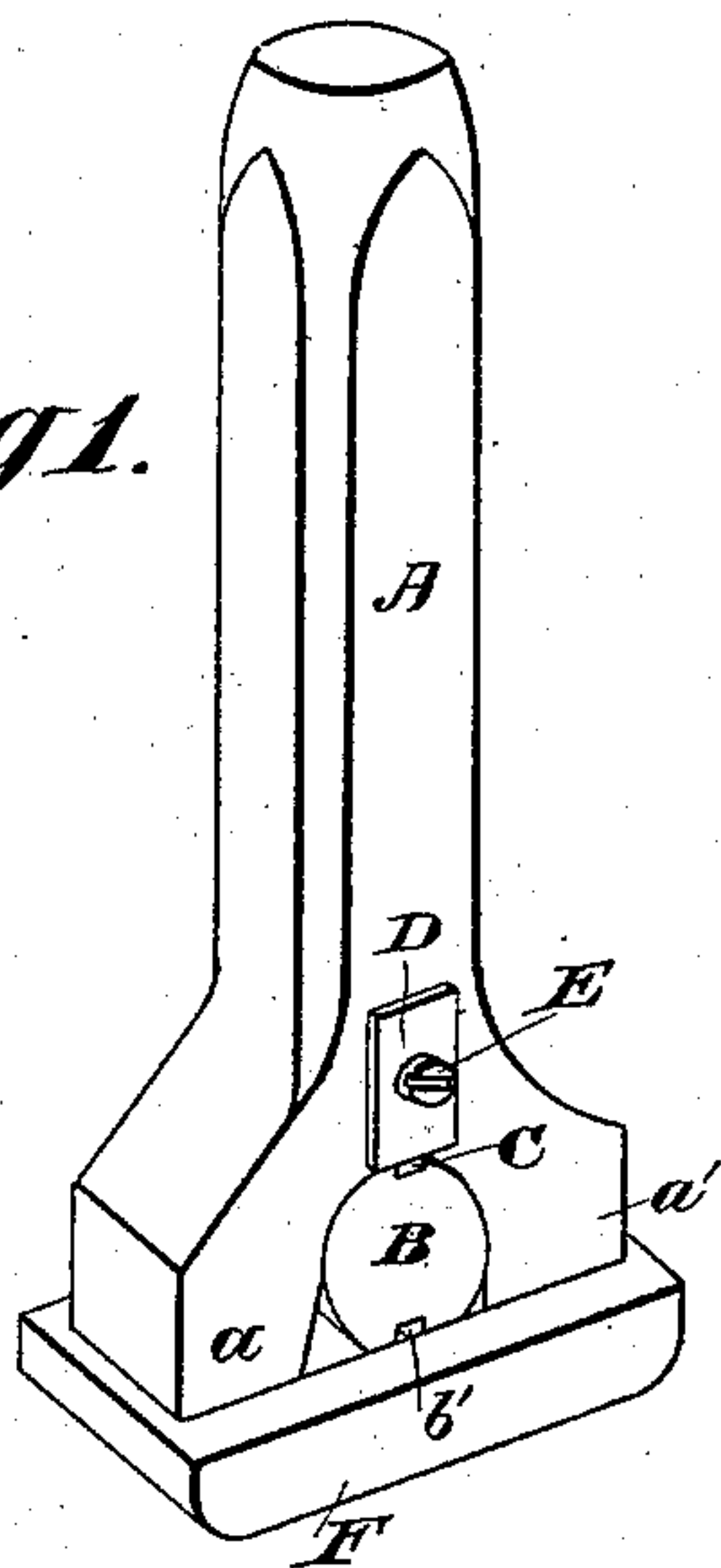


Fig 2.

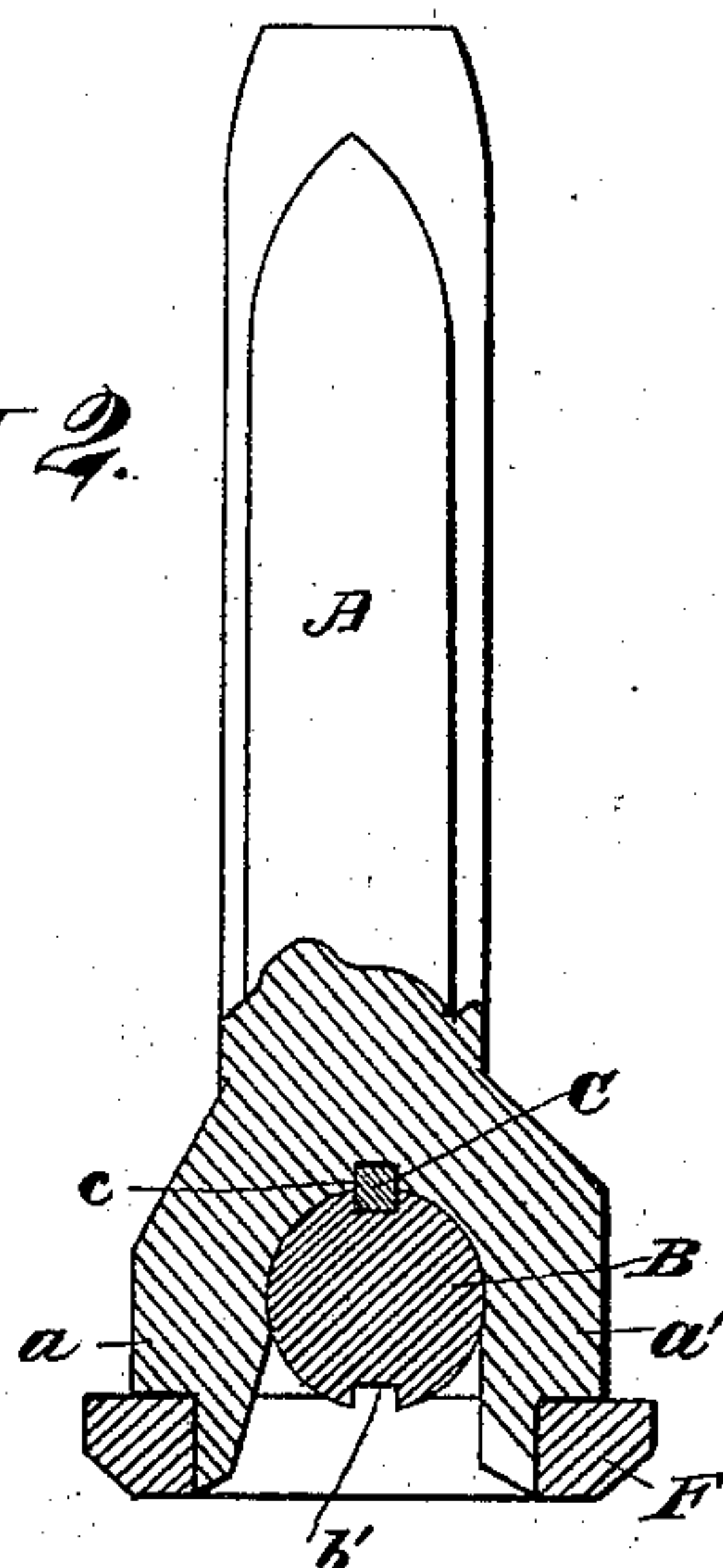


Fig 3.

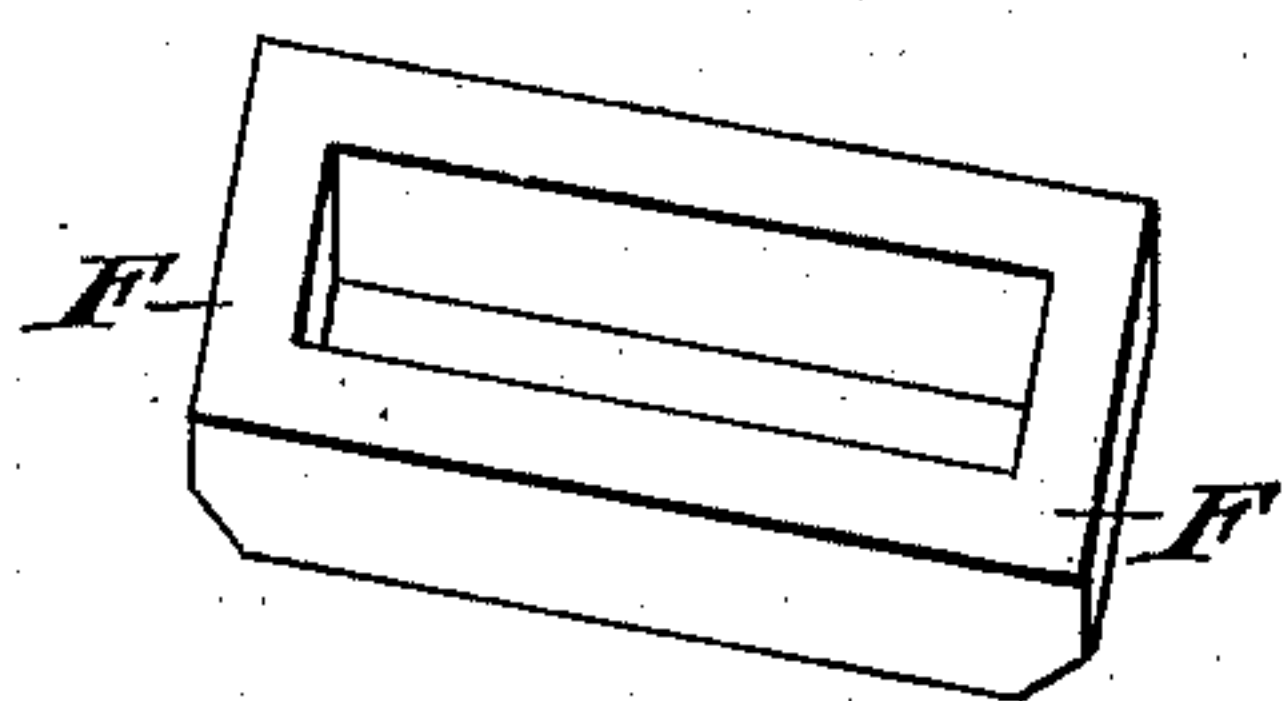


Fig 4.

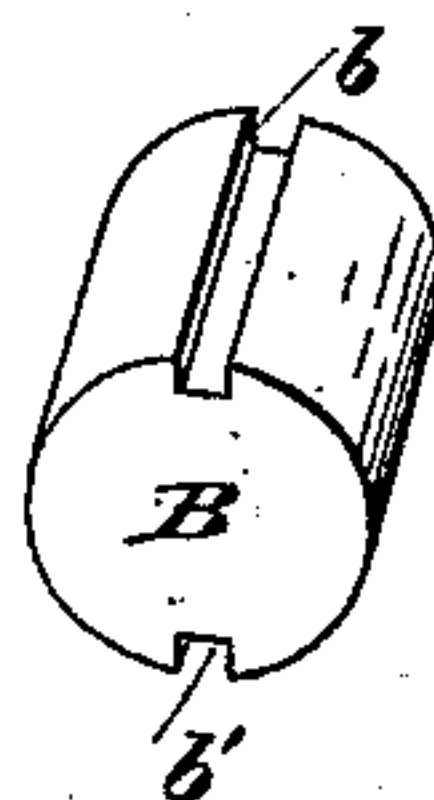


Fig 5.

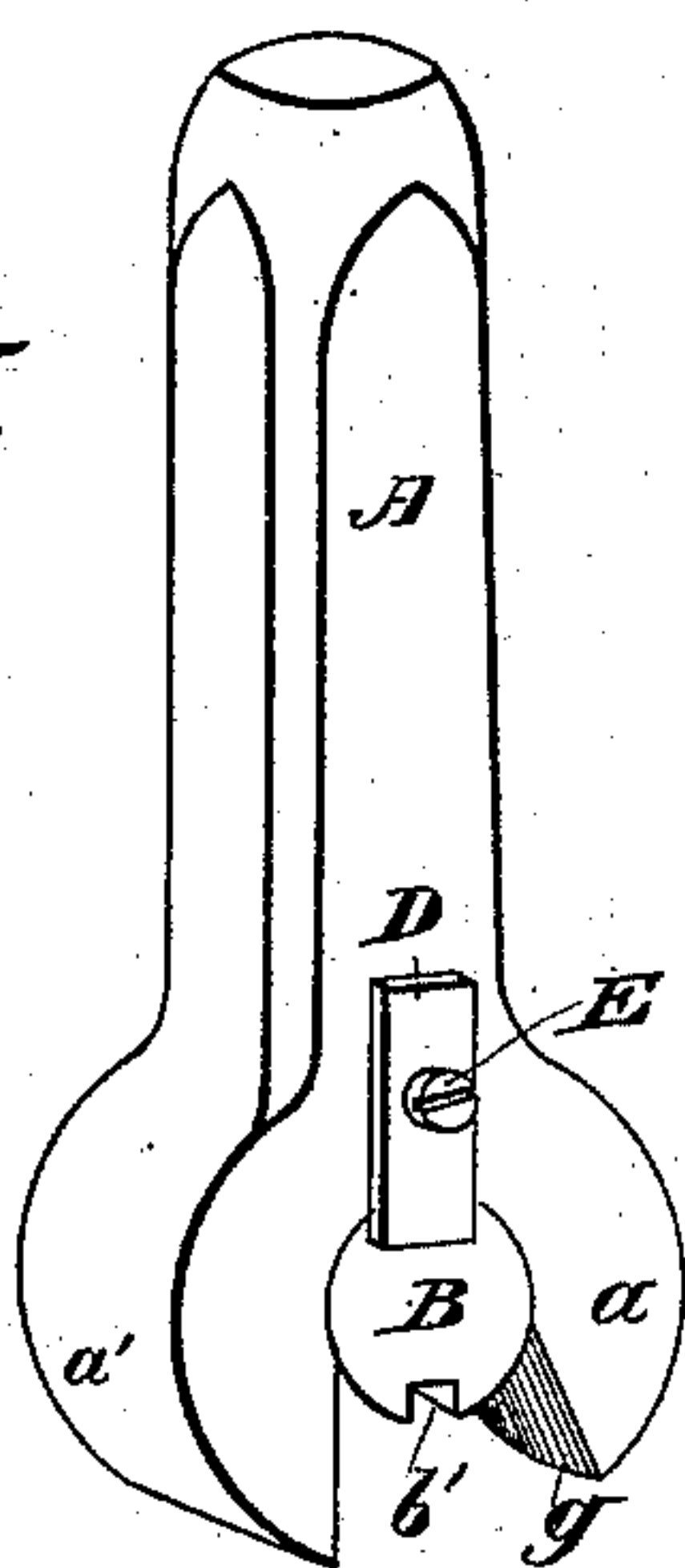
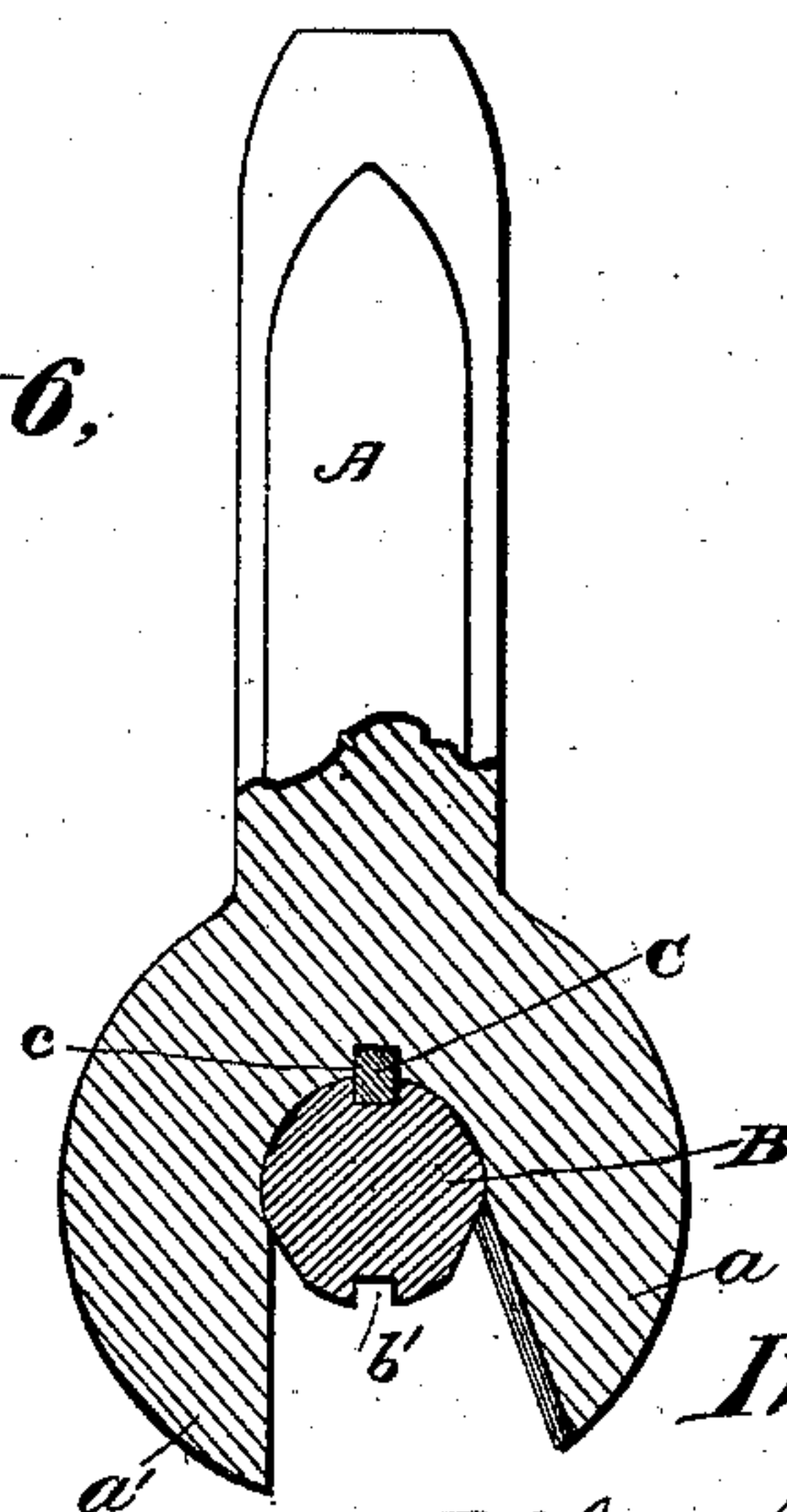


Fig 6.



Attest

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UNITED STATES PATENT OFFICE.

NELSON JOHNSON, OF JASPER, NEW YORK.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 242,935, dated June 14, 1881.

Application filed April 16, 1881. (Model.)

To all whom it may concern:

Be it known that I, NELSON JOHNSON, a citizen of the United States, residing at Jasper, in the county of Steuben and State of New York, have invented Improvements in Saw-Swages, of which the following is a specification.

The subject of my invention is a swage or upset for spreading the points of saw-teeth, consisting of a pair of jaws formed upon a stock or body, and containing within them a cylindrical seat or socket forming an arc of more than one hundred and eighty degrees, so as to adapt it to receive and hold a cylindrical swage-pin, which, as well as the socket of the stock in which it fits, is key-seated to hold it against rotation. The inclined jaw against which the saw-tooth is swaged is made convex where it comes in contact with the point of the tooth, in order to turn up the extremity of the tooth, as hereinafter described. The swage-pin, being formed with two key-seats, is made reversible, so that it may be set in new position when once worn. The said swage-pin is, if preferred, made with several flat faces; so as to modify the effect on the tooth and the form imparted thereto, as will be hereinafter more fully described.

The invention further relates to combining with the swage an inclosing-band, by which the extremities of its jaws are supported and the lateral slipping off of the tooth prevented, as hereinafter explained.

In the accompanying drawings, Figure 1 is a perspective view of a swage illustrating the invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a perspective view of the band detached. Fig. 4 is a perspective view of the cylindrical swage-pin detached. Fig. 5 is a perspective view of a swage illustrating a modification in which the inclosing-band is dispensed with and its functions in part performed by buttons for retaining the swage-pin in place. Fig. 6 is a longitudinal section of the swage, illustrating a modification in the form of the swage-pin.

A represents the stock of the swage formed with two jaws, *a a'*.

B is the reversible swage-pin formed with two key-seats, *b b'*, and fitted within a cylindrical socket or seat prepared for it between

the jaws of the stock, the said cylindrical opening extending about five-eighths of a circle, more or less, so as to firmly secure the reversible swage-pin against movement toward the extremities of the jaws. A wedge-shaped key, C, being driven into the seat *b* or *b'*, and in a corresponding key-seat, *c*, prepared in the inner surface of the socket, holds the pin B from rotation and forces it firmly outward, so as to form tight joints with the front converging portion of its cylindrical seat or socket, where the upsetting of the tooth is to be performed. One or more buttons, D, secured by a screw or screws, E, are turned over the key C, and, if necessary, are made long enough to extend over the ends of the cylindrical swage-pin B, as illustrated in Fig. 5, so as to retain the said swage-pin, as well as the key C, in position.

In the form of the invention illustrated in Fig. 1 a single button, D, being applied over the larger end or heel of the wedge-shaped key C, suffices to retain said key in its seat, the reversible swage-pin B being retained by a band, F, fitted over the extremities of the jaws *a a'*. The said band has the further function of retaining the tooth against slipping laterally out of the swage or upset; but the band is not of sufficient thickness to completely cover or mask the angle between the jaw *a* and the swage-pin B, where the swaging action is performed. The open corners thus provided permit the free expansion of the end of the saw-tooth without any danger of destroying the corners of the same or impairing their fine and sharp finish.

In operation, if it be desired to form a tooth with a point concave on top, the top or back of the tooth is placed against the angular face of the jaw *a*, the under side of the tooth resting against the convex surface of the swage-pin B. As the swage or upset is driven on the end of the tooth the extremity of the tooth will tend to follow around the circle of the swage-pin socket, so as to receive the desired concavity or upturning of the top of the tooth.

If it be desired to turn the end of the tooth slightly downward, the swage may be applied in the reverse position; or by means of the modified swage-pin with flat sides (illustrated in Fig. 5) the tooth can be upset between two flat surfaces, or between the flat surface of the

swage-pin on its under side and the oval surface *g*, prepared for the purpose within the jaw *a*, and by turning the swage over frequently the tooth can be spread much more rapidly
5 than by the use of swages or upsets of common form. The convexity shown at *g* has the further beneficial effect of imparting a more flush or even shape to the edge of the tooth.

Having thus described my invention, the
10 following is what I claim as new therein and desire to secure by Letters Patent:

1. A saw-swage consisting of a stock, A, with jaws *a a'*, forming a cylindrical arc of more than one hundred and eighty degrees,
15 containing a swage-pin, B, which is driven

outward in contact with the extremities of the arc by the key C, substantially as explained.

2. The combination of a stock, A, reversible swage-pin B, and key C, substantially as and
for the purposes set forth. 20

3. The combination of the stock A, swage-pin B, and band F, as and for the purposes set forth.

4. The combination of the stock A, swage-pin B, and button D, as described.

NELSON JOHNSON.

Witnesses:

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F. H. CRANE.