

(No Model.)

L. H. SANDERSON.  
Soldering Tweezers.

No. 243,629.

Patented June 28, 1881.

Fig. 1.

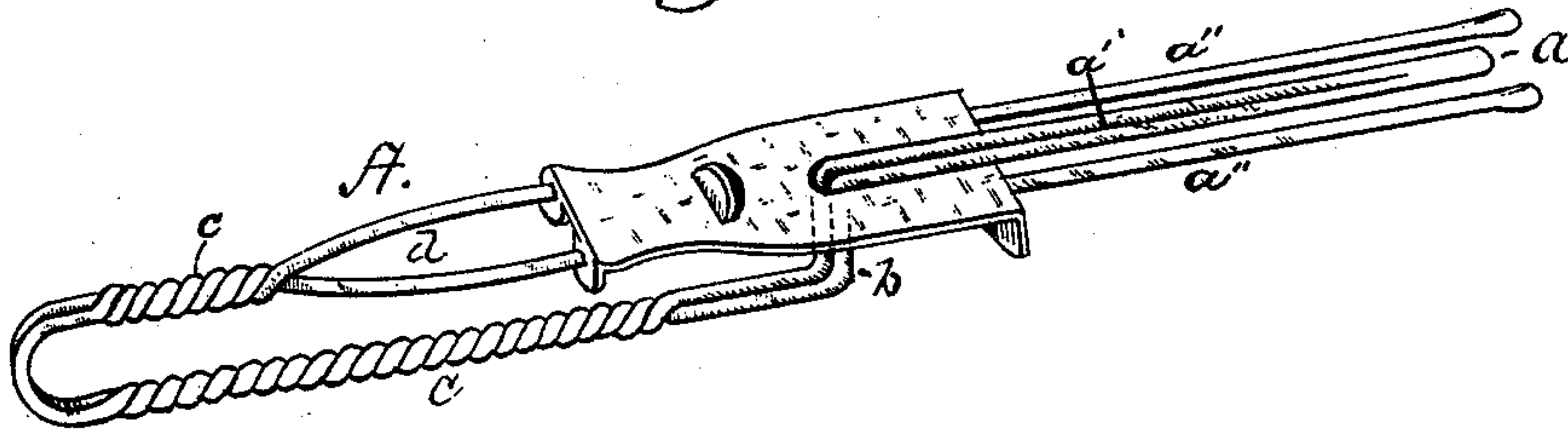


Fig. 2.

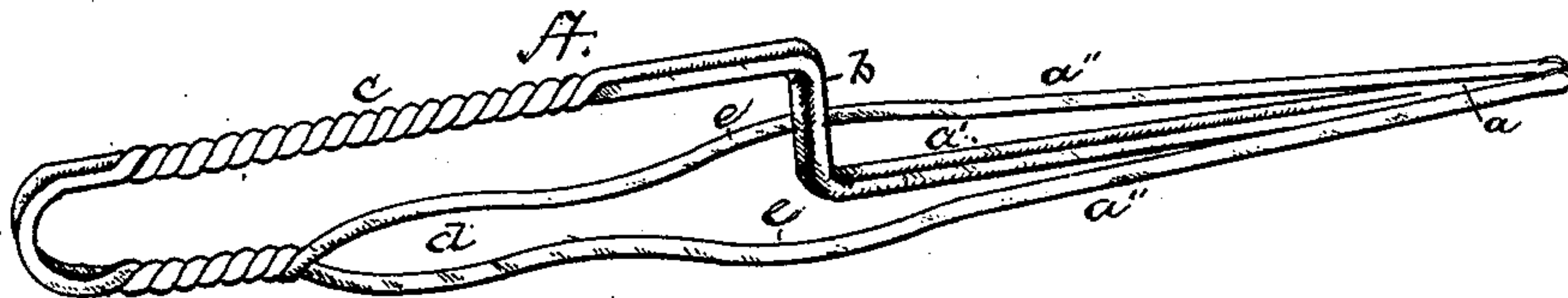


Fig. 3.

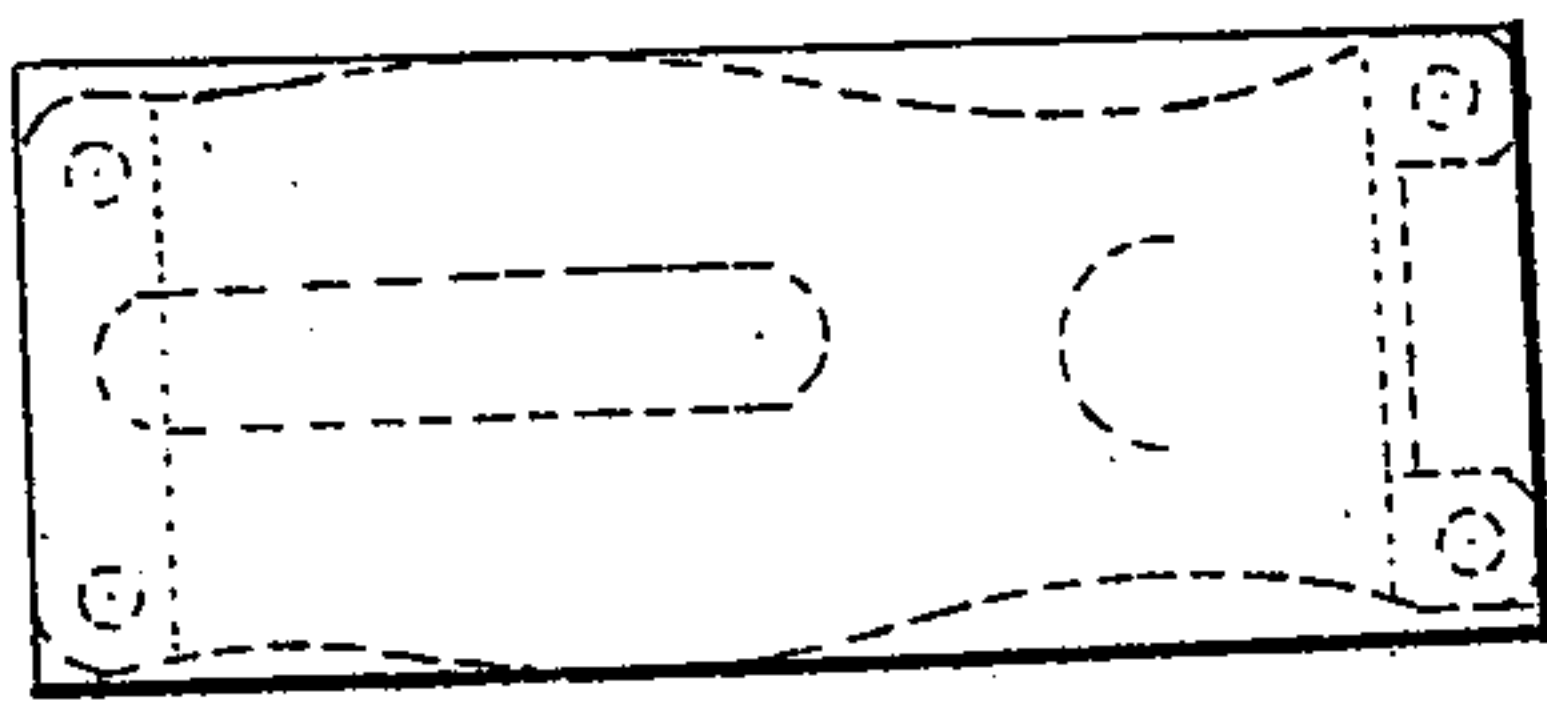
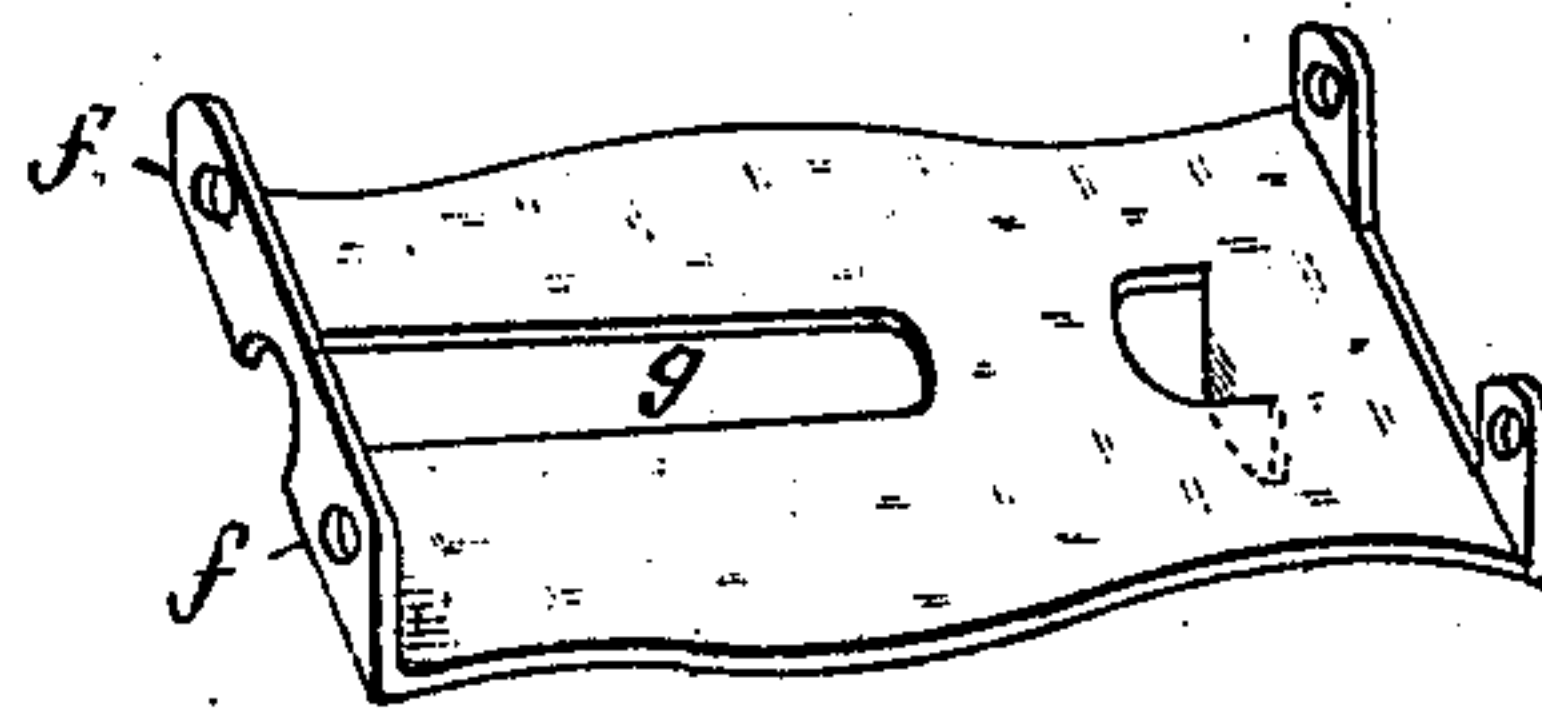


Fig. 4.



Witnesses;

Walter Fowler  
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# UNITED STATES PATENT OFFICE.

LUCIOUS H. SANDERSON, OF NEW YORK, N. Y.

## SOLDERING-TWEEZERS.

SPECIFICATION forming part of Letters Patent No. 243,629, dated June 28, 1881.

Application filed May 17, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, LUCIOUS H. SANDERSON, a citizen of the United States of America, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Soldering-Tweezers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to soldering-tweezers for watch-makers' and jewelers' use, and for other purposes. The object is to construct a tool with which to clamp and hold small articles that are difficult to manipulate, and this is attained by means of spring-jaws actuated by the hand of the workman and a sliding device moved by the thumb, and so shaped and applied in connection with the jaws of the tool that the tweezers may be opened and closed at the will of the operator.

My invention therefore consists in a soldering-tweezers made with three holding jaws or arms, and formed out of one or more pieces of spring metal.

My invention further consists in a solder-tweezers made of elastic metal and formed out of one or more pieces, in combination with a sliding clamp, whereby two of the holding jaws or arms are opened or closed by the movement of the sliding clamp.

My invention also consists in the novel construction and combination of the parts, as will be hereinafter more fully described and specifically claimed.

In the annexed drawings, Figure 1 represents a perspective view of my improved soldering-tweezers. Fig. 2 represents the tool divested of the sliding clamp. Fig. 3 is a plan view of a blank, showing the outline of the sliding clamp; and Fig. 4 is a perspective view of the sliding clamp.

The letter A represents the wire frame of the tweezers, which may be constructed substantially in the following manner: I take a piece of wire, of sufficient strength and size and of the desired length to answer the pur-

poses of the tool, and bend it sharp around in the center until the parts are brought together, as shown at *a*. At such distance as may be desired, according to the size of the tool, the wires are struck down at right angles with the prongs, as shown at *b* in the drawings, and then again bent up in a line with the prong, after which the wires are carried plain side by side for a short distance, when they are twisted together for a distance, thus forming part of the gripe or handle, substantially as shown at *c*. At this part they are bent in circular shape, forming the spring, and are carried together until about opposite the twist in the other arm of the tool, when they are again twisted together for a short distance and clipped off to correspond with the length of the completed arms *a'' a''* of the tool, after which they are spread, as shown at *d* in the drawings, in order to give a springing tension to them. After being thus spread apart they are bent down so as to form a swell of the form substantially as shown at *e* in the drawings, and again spread apart and then bent toward each other, forming another swell, and carried toward each other until the points come together. The frame is now ready for the application of the sliding clamp. The blank of this clamp is shown in Fig. 3, and the dotted lines indicate the outlines of the plate, which is put in shape by striking down the ends of the plate on the cross-lines, and the thumb-rest being struck up, as shown in Fig. 1 of the drawings. A representation of this clamp complete is shown in Fig. 4 of the drawings, and it is applied to the tweezers by inserting the ends of the single prongs or jaws *a'' a''* in the holes *f* and carrying the plate back over the wires, with the double arm *a'* of the tweezers underneath. The end of the arm *a'* is brought up through the slot *g* and the plate carried back until the step of the double arm *a'* comes into the slot *g*. The single prongs *a'' a''* may now be shaped at their points to suit the operator, and the double prong or arm *a'*, after being united by solder at the end for a short distance, can then be shaped as desired.

When it is desired to use the tool as a two-prong tweezers pressure upon the handle accomplishes the purpose, and when desired to use it as a three-prong tool the sliding clamp



is brought into requisition. By pressing it forward with the thumb the effect of the inclines of the swells in the arms  $a'' a''$ , as they pass through the plate, is to open the single jaws at the point, and by pressing the handle the other jaw,  $a'$  is also thrown from the points of the others, and thus all are spread or opened. By releasing the pressure on the handle and drawing back the sliding plate the tool is closed at the points. The bent portion  $b$  forms a forefinger-rest for the hand of the operator.

It is obvious that the frame of the tool, as shown in Fig. 2 of the drawings, can be made of a single piece of wire.

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

1. A soldering-tweezers having three arms or jaws formed of a bent piece or pieces of wire, substantially as described.

2. The combination, substantially as described, of the frame having the three spring arms or jaws, and the sliding plate for opening or closing two of the spring-jaws.

3. As a new article of manufacture, the sliding plate formed with the longitudinal slot  $g$ , end perforations,  $f$ , and thumb-piece, substantially as shown and described.

4. As a new article of manufacture, the wire frame A, with the arms or jaws bent and shaped substantially as shown in Fig. 2 of the drawings.

In testimony whereof I affix my signature in presence of two witnesses.

L. H. SANDERSON.

Witnesses:

J. M. YZNAGA,  
A. G. HEYLMUN.