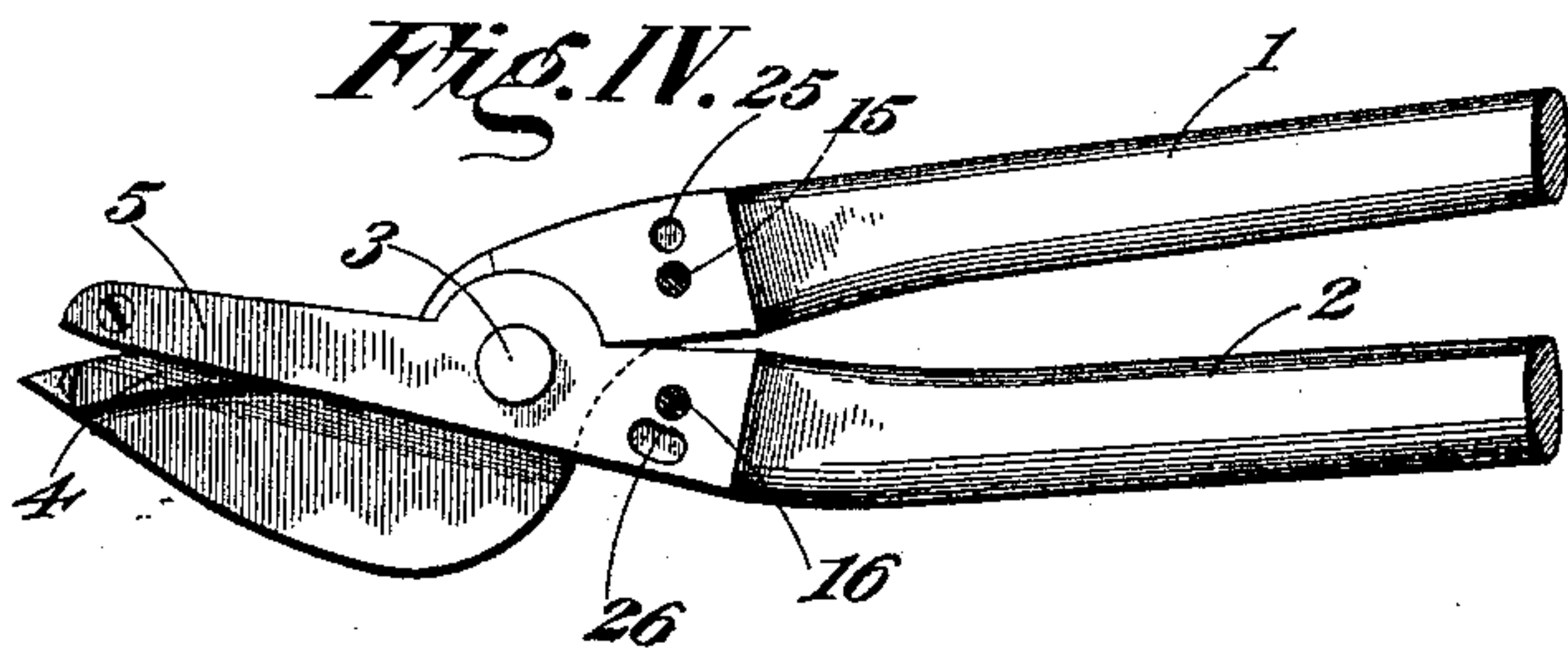
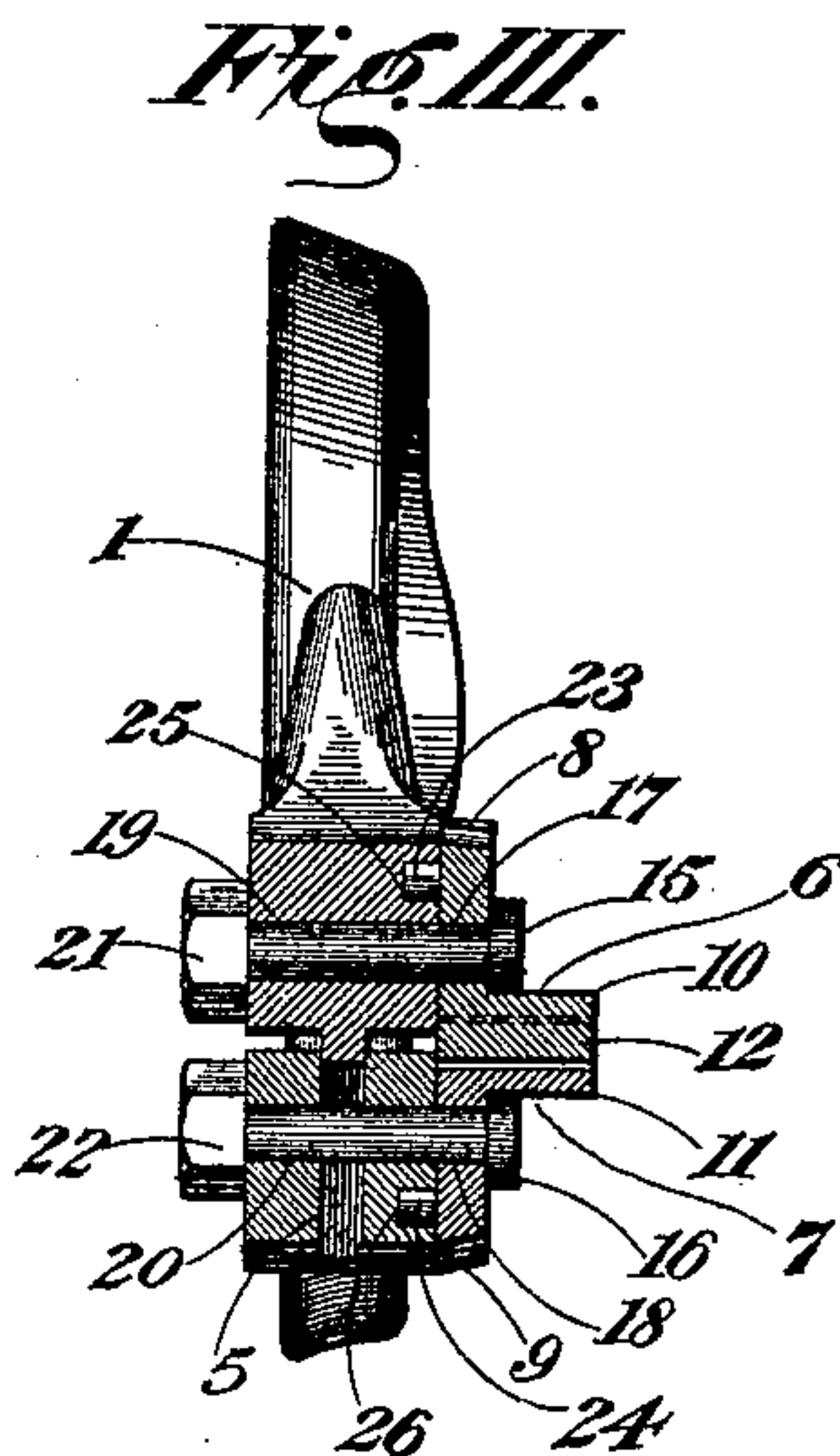
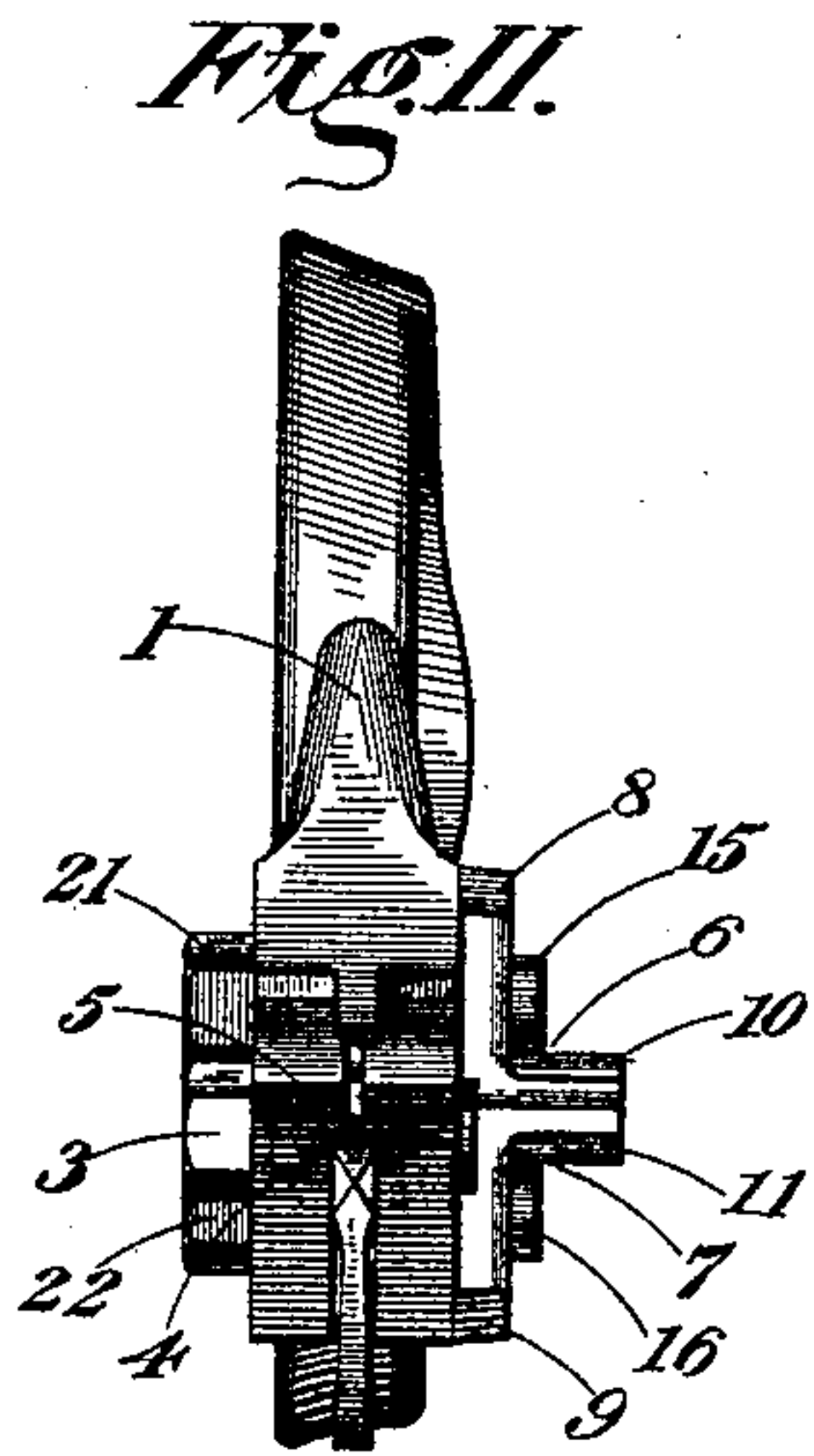
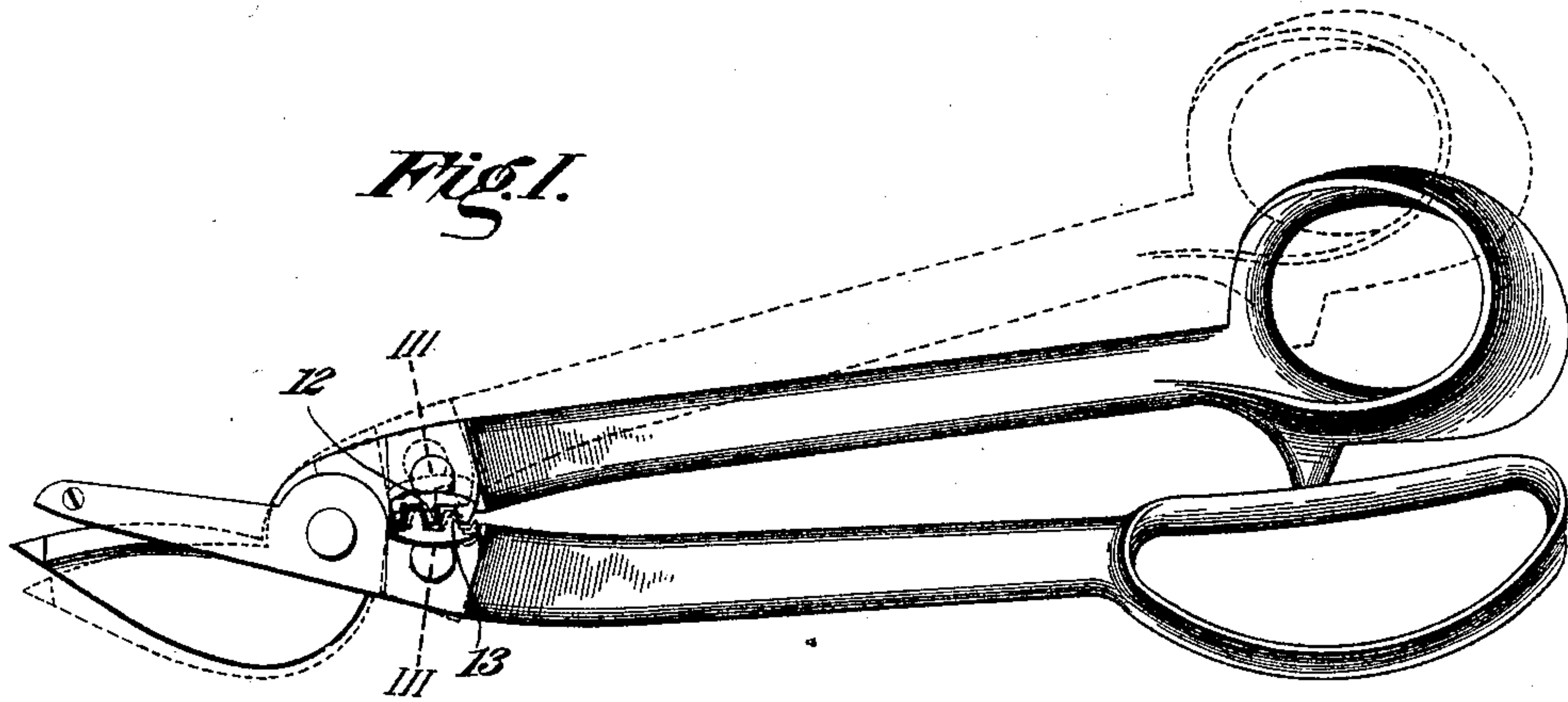


(No Model.)

P. W. BERRIDGE.  
METAL CRIMPING TOOL.

No. 594,225.

Patented Nov. 23, 1897.



Witnesses

*M. E. Fowler*  
*Chester A. Baker.*

Inventor:

*Philip W. Berridge,*  
*By Joseph L. Perkins*  
Attorney.



# UNITED STATES PATENT OFFICE.

PHILIP W. BERRIDGE, OF STURGIS, MICHIGAN.

## METAL-CRIMPING TOOL.

SPECIFICATION forming part of Letters Patent No. 594,225, dated November 23, 1897.

Application filed March 26, 1897. Serial No. 629,406. (No model.)

*To all whom it may concern:*

Be it known that I, PHILIP W. BERRIDGE, of Sturgis, in the county of St. Joseph, State of Michigan, have invented certain new and useful Improvements in Metal-Crimping Tools, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce an improved tool for crimping metal, which in its preferred form of embodiment is combined with a cutting-tool or shears, forming therewith a combination-tool.

In the accompanying drawings, Figure I is a side elevation of my invention embodied in the form of a combination-tool, showing in full lines the handles closed. In full lines the dies are shown closed and in dotted lines are shown the handles partially open and the changed position of the oscillatory die. Fig. II is an end elevation of the subject-matter of Fig. I. Fig. III is a section on the line III III of Fig. I. Fig. IV is a side elevation, as in Fig. I, with the dies removed.

Referring to the figures on the drawings, 1 and 2 indicate, respectively, a pair of shear-handles pivoted together, as indicated at 3, and provided, respectively, with cutting-blades 4 and 5.

The form of cutting-blades illustrated is selected merely for the purpose of illustration. Any variety of cutting-blades or any variety of pivotally-united handles without cutting-blades is adapted to be employed in connection with my invention.

In the manufacture of tools of this class the handles are usually made of untempered metal, and the blades are either tempered or are made of a separate piece of steel attached to the handles.

By my invention I propose to accomplish two distinct objects. One is to provide removable crimping-dies, which may be made of metal of the requisite temper and detachably secured to the handle, so that they may be replaced when worn, or if one or both should be found to be of defective temper they can be renewed as often as required. The other object is to produce a pair of dies preferably arranged at an angle to and offset from the plane of the shear-blades, of which one or both of the dies is oscillatory in order

to accommodate them to their work and render them more efficient in operation.

In the drawings, 6 is illustrated as a fixed die and 7 as the oscillatory die. They are identical in construction, so as to be interchangeable in use, each being provided with a base-plate 8 and 9, respectively, and substantially at right angles thereto with crimping-plates 10 and 11, respectively. The crimping-plates are provided, respectively, with corrugated die-faces 12 and 13, respectively, of correlative conformation, so that when they are brought into opposition they are adapted to fit one within the other. It is desirable to form the teeth that constitute the corrugations deep and wide apart, as illustrated. By this means the tool is adapted to crimp heavy iron easily. Moreover, by making the teeth comparatively deep the tool will perform the crimping operations without completely closing the handles, whereby the working of the tool is facilitated.

The dies are secured to their respective handles, as by bolts 15 and 16, respectively, passing through apertures 17 and 18, respectively, in the base-plates of the respective dies and through apertures 19 and 20 in the respective handles. The bolts are terminally screw-threaded to enter their respective nuts 21 and 22, by which they may be operatively secured to their respective handles.

The base-plate of each of the dies is provided with a dowel or lug 23 24, which when the base-plate is secured against the face of its respective handle, as by means of its bolt, enters a recess in the face of the member to which it is secured. The engagement of the lug with the wall of the recess is designed to limit or prevent movement of the die.

While it is practicable and in some instances desirable to render both dies movable, yet I have illustrated and prefer to employ one fixed and one movable die. To accomplish that object, as illustrated, the lug 23 enters a recess 25 in the face of the member to which it is secured, and the recess is formed to fit snugly upon the lug. Consequently when the bolt 15 is drawn up tight by its nut 21 the die 6 is secured rigidly to the handle 1. On the other hand, the lug 24 enters a recess 26 in the member to which it is secured, and the recess is oblong or of larger diameter



than the lug which it receives. Consequently in practice a limited oscillatory movement of the die 7 is obtained through engagement of the teeth of the die 6 with its teeth, as clearly 5 illustrated in Fig. I. The bolt 16, which secures the die 7 to its actuating member, which, as illustrated, is the handle 2, is not drawn so tightly as the bolt 15, but only snugly 10 enough to hold it in firm position without binding it so closely as to prevent the requisite oscillatory movement.

What I claim is—

1. The combination with a pair of pivotally-united handles, of a crimping-die fixed 15 to one of the handles, and extending in a plane parallel with the pivotal axis of the handles, of a correspondingly-located oscillatory die secured to the other handle, and adapted to be actuated by engagement of the fixed die, 20 substantially as set forth.

2. In a crimping-tool, the combination with one of its handles, of a die provided with a base-plate, and a crimping-plate extending

out therefrom at substantially a right angle and a lug upon the base-plate, a recess in the 25 handle adapted to receive the lug, registering apertures in the base-plate and handle, and a bolt adapted to enter said apertures and secure the die to the handle, substantially as set forth.

3. In a crimping-tool, the combination with 30 one of its handles, of a die provided with a base-plate, and a lug upon the base-plate, of a recess in the handle of greater diameter than the lug, adapted to receive it, registering 35 apertures in the base-plate and handle, and a bolt adapted to enter said apertures and secure the parts movably together, substantially as set forth.

In testimony of all which I have hereunto 40 subscribed my name.

PHILIP W. BERRIDGE.

Witnesses:

L. E. WHITE,

H. L. ANTHONY.