

(No Model.)

J. O. MITCHELL.
WIRE WORKING TOOL.

No. 543,100.

Patented July 23, 1895.

Fig I.

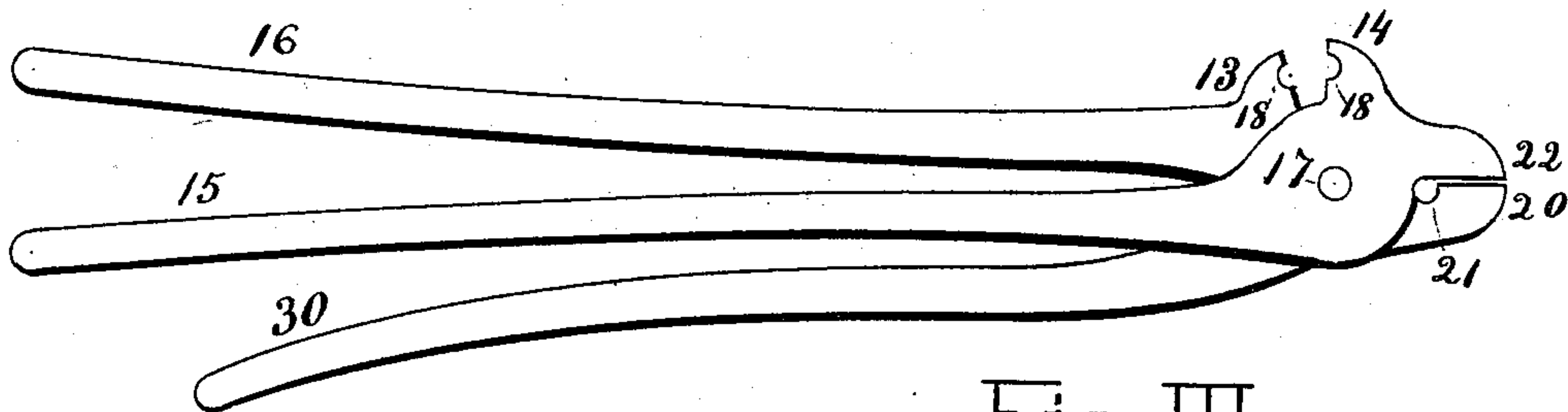


Fig II.

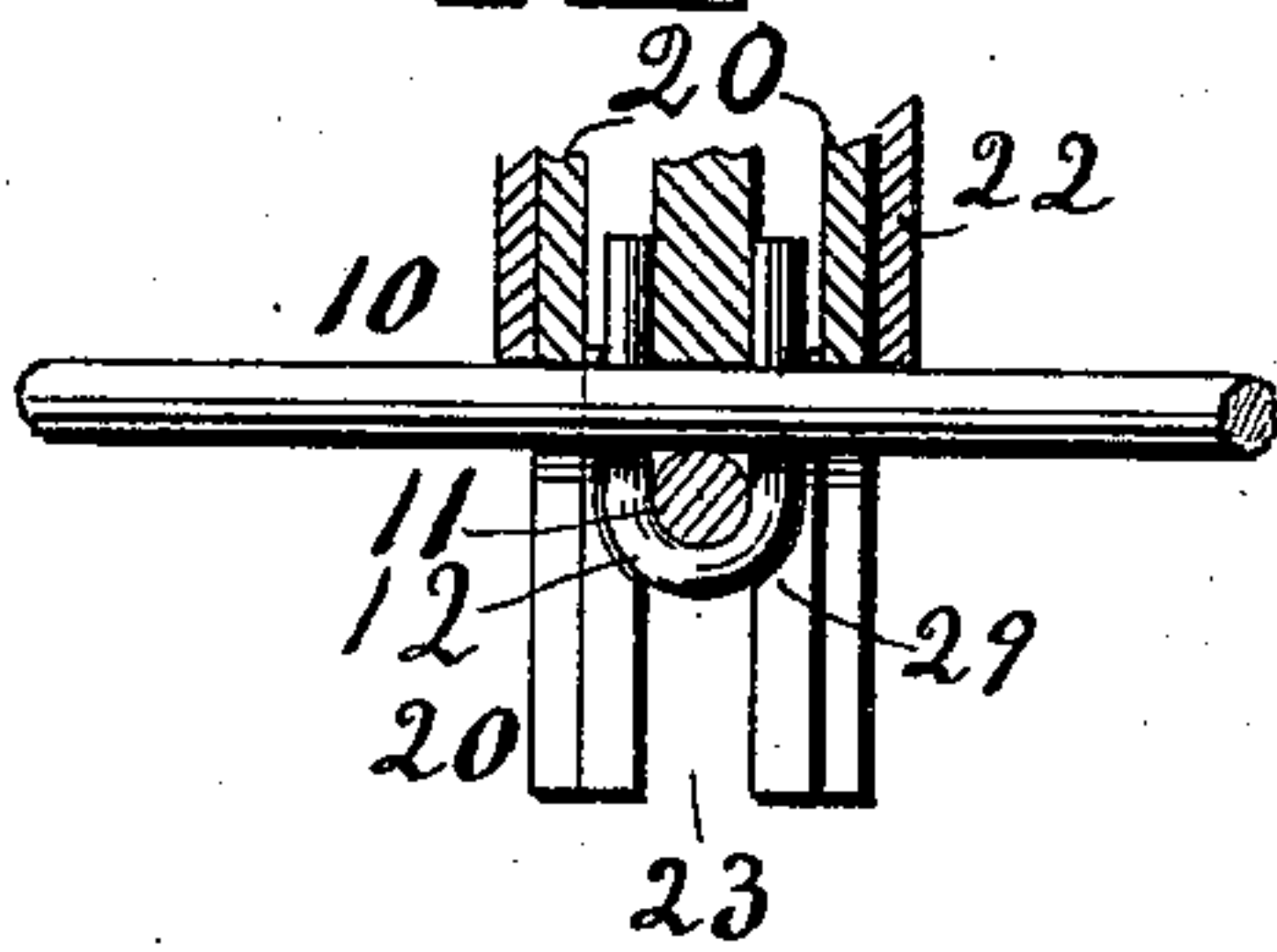


Fig III.

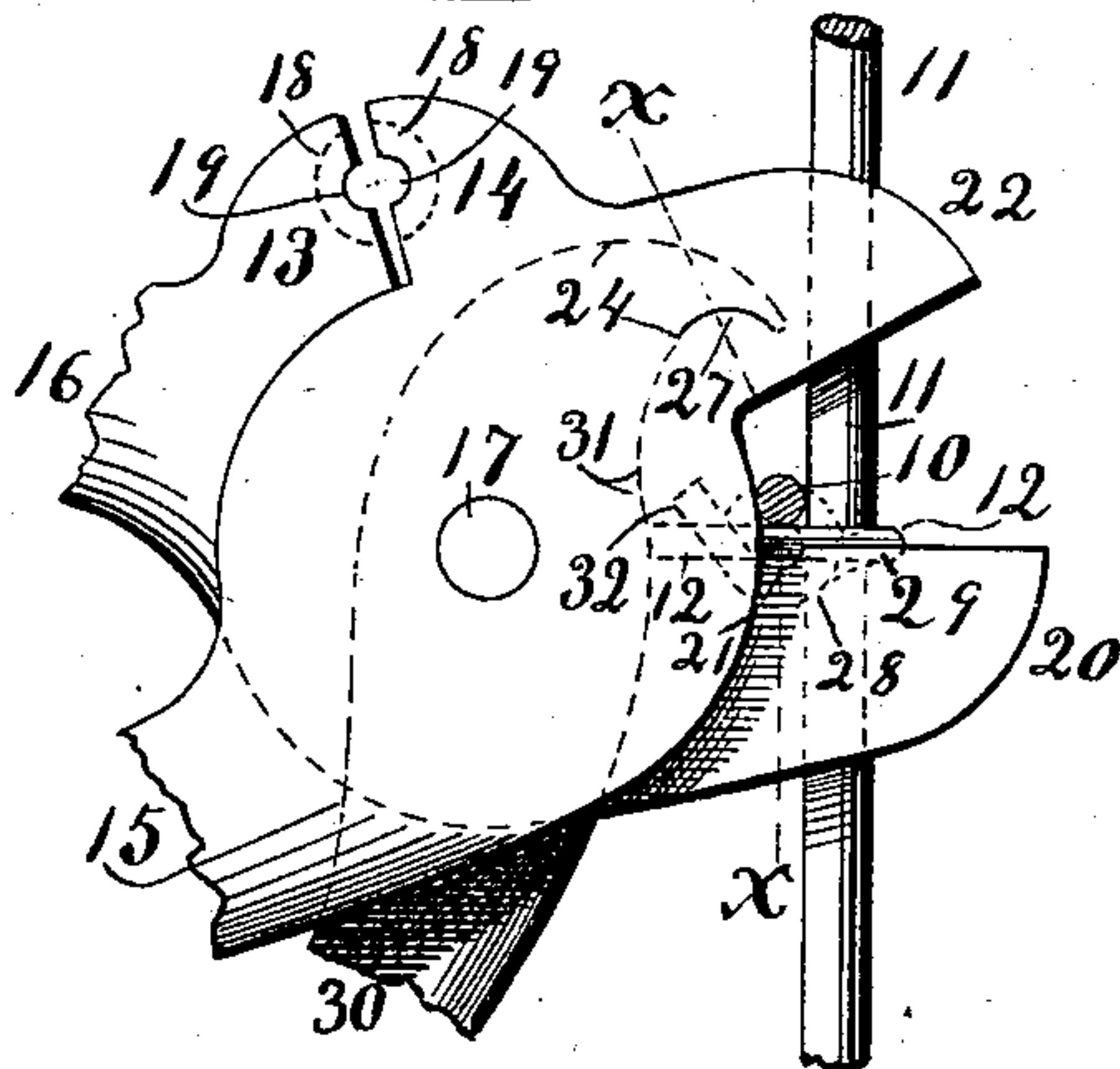


Fig IV.

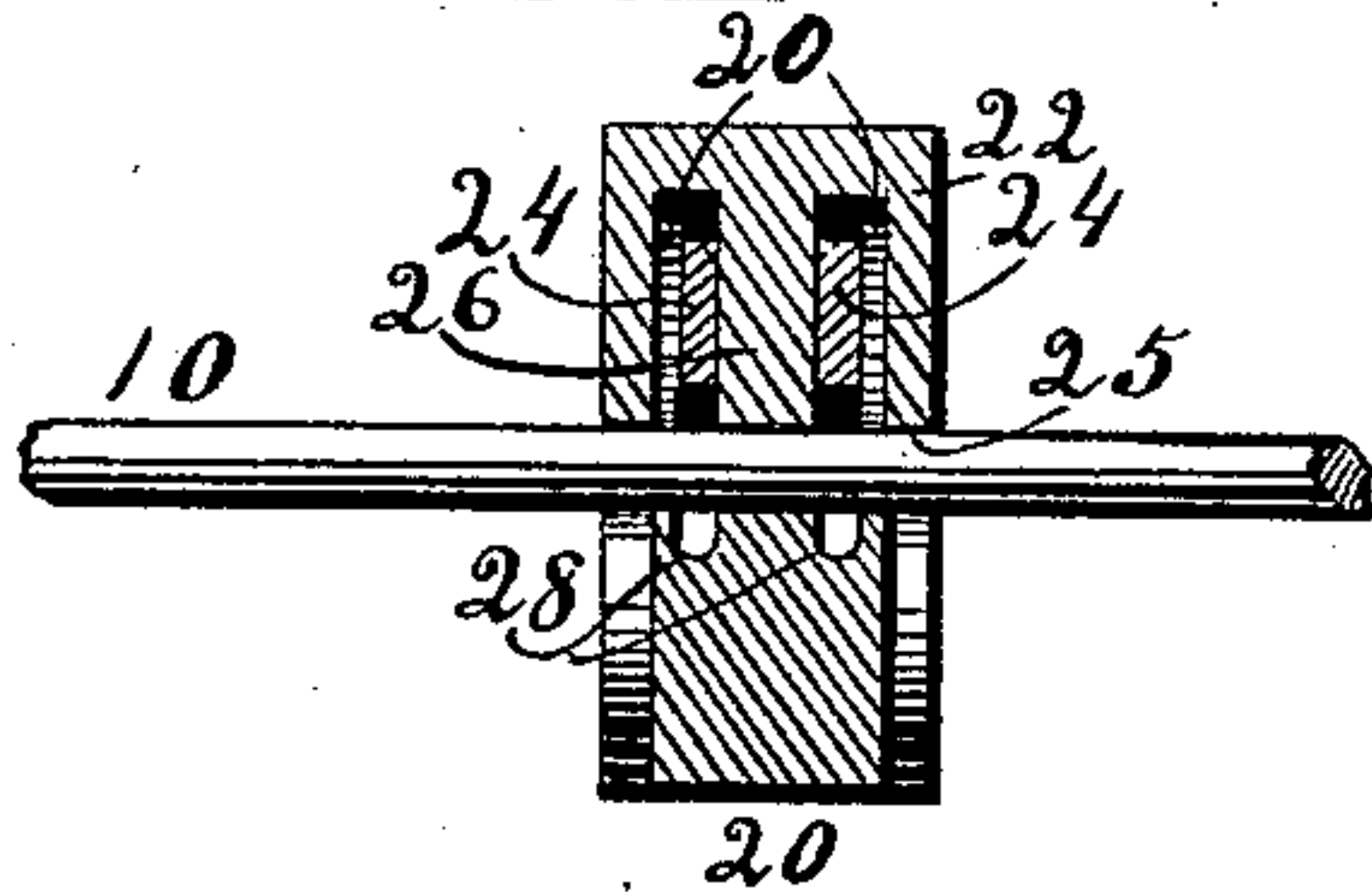
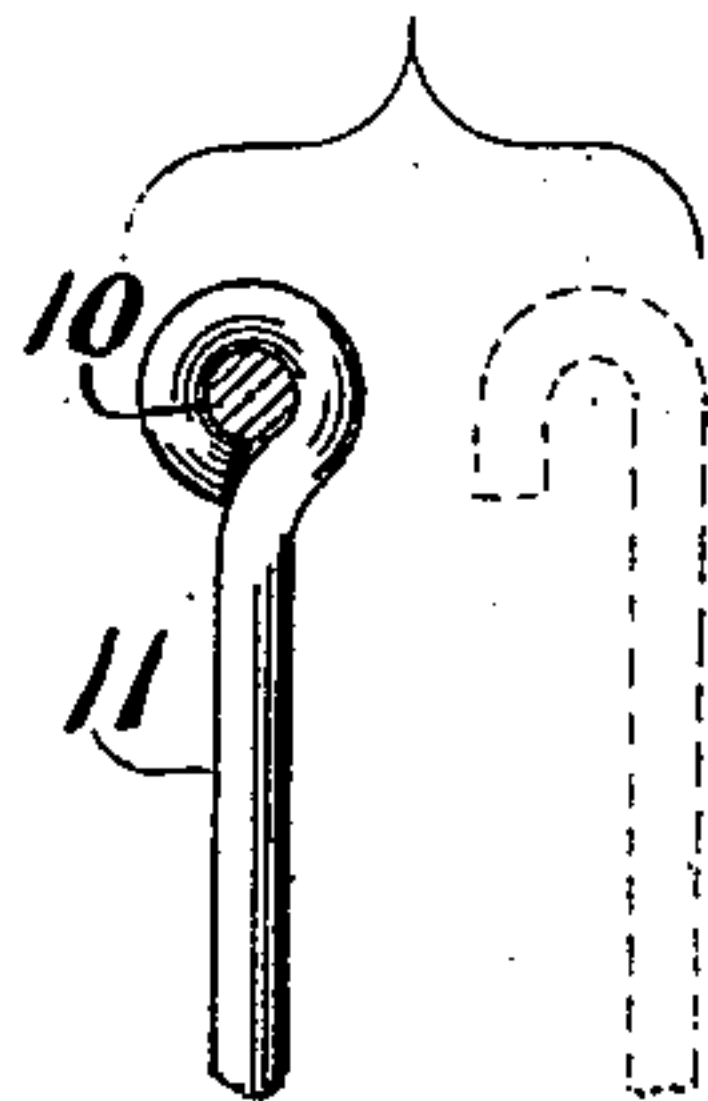
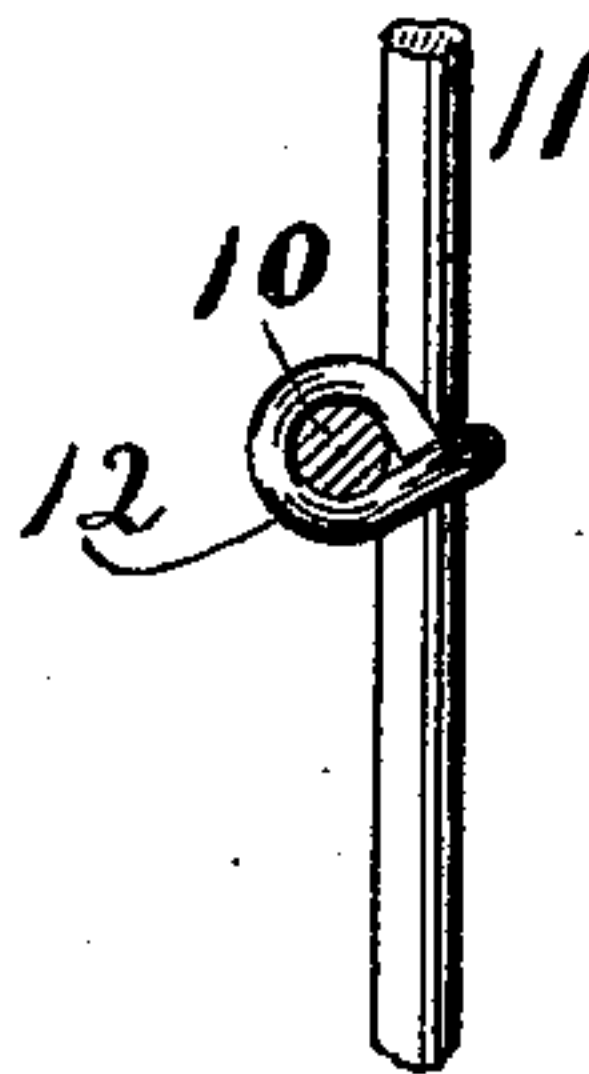


Fig V Fig VI.



WITNESSES,

P. Egbert Stevens.
Emma G. Brashears.

INVENTOR.

James O. Mitchell.
by H. K. Stevens. ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES O. MITCHELL, OF BASIC CITY, VIRGINIA, ASSIGNOR OF ONE-HALF TO SARAH ELIZABETH RANKIN, OF SAME PLACE.

WIRE-WORKING TOOL.

SPECIFICATION forming part of Letters Patent No. 543,100, dated July 23, 1895.

Application filed October 29, 1894. Serial No. 527,327. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. MITCHELL, a citizen of the United States, residing at Basic City, in the county of Augusta and State of Virginia, have invented a new and useful Improvement in Wire-Working Tools; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure I is a side elevation of a wire-working tool according to my invention, particularly adapted for applying the staples which bind the uprights to the stringers and for securing the uprights directly to the stringers in wire fences. Fig. II is a top view of the lower jaw, a stringer, and a staple, showing a portion of the jaw and one of the uprights in horizontal section on a larger scale. Fig. III is a side elevation of the head of this instrument. Fig. IV represents the same in transverse vertical section on the line $x x$ of Fig. III. Fig. V is a side elevation of an upright, showing a stringer in transverse vertical section and a staple as bent and applied by this tool, securing the upright to the stringer; and Fig. VI is a side elevation of the head of an upright attached to a stringer.

It is common in building a fence of wire to secure to the posts a number of wires one above another along the line of the fence, these wires being called "stringers," and it is common to secure uprights at intervals along the fence to each of the stringer-wires to prevent them from being separated by hogs and other stock in attempting to crowd between; and the object of the present invention is a tool to be worked by hand to first bend the top of each upright closely around and to squeeze it firmly upon the upper stringer; second, to bend staples around the uprights and stringers at each crossing of the two to secure them rigidly together.

To this end my invention consists in the construction and combination of parts, forming a wire-working tool, hereinafter more fully described and claimed.

10 represents a single stringer-wire of a fence, 11 an upright wire, and 12 a staple for securing these two wires together. These

staples will be furnished by dealers in the form shown in Figs. II and III.

13 represents the front jaw and 14 the rear jaw of that portion of this device which is adapted for closing the heads of the uprights around the top stringer, as shown in Fig. VI. The original form of these uprights is shown in dotted lines in Fig. VI, the wire being provided with a short return bend adapted to hook over the upper stringer-wire like a staple. The jaw 14 is provided with a handle 15 and the jaw 13 with a handle 16, the jaw 13 being let into the jaw 14 at the joint and the two pivoted together upon a strong central bolt 17. In using this part of the tool it is turned over and the jaws 13 14 are placed down upon the head of the upright, while notches 19 in the jaws are left for the passage of the stringer, and 18 represents recesses in the two jaws to receive and shape the head of the upright 11 in pressing it around the stringer. Now if the handles 15 16 be pulled away forcibly the jaws 13 14 will be closed together and the head of the upright 11 will be bent around and squeezed tightly upon the stringer 10 in the neatly-finished form shown in Fig. VI in full lines.

20 represents the lower jaw provided with a transverse notch 21 to receive the stringer 11, and with a recess in its upper face to receive a staple 12 about half-buried into the jaw, as shown in Figs. II and III.

22 is the upper jaw, made integral with the jaw 14 and the handle 15, while the jaw 20 is integral with the jaw 13 and the handle 16. The jaws 20 and 22 are slotted vertically in their front ends, as shown at 23 in Fig. II, to admit an upright 11, so that it may rest firmly against the side of a stringer 10 when the latter is at the notch 21.

24 represents in dotted lines the finishing-jaw located within the jaw 20, as shown in cross-section in Fig. IV, to turn upon the common pivot-bolt 17. The jaw 24 is parted centrally or made double at its working end, as shown in Fig. IV, corresponding in width to the two arms of the staples, so that it may act upon both at once. The jaw 22 occupies the outside position at the joint to rest at its two sides 25 upon a stringer when in service, 100

and is also provided with a central portion 26 to rest upon the same stringer, as shown in Fig. IV. The two portions of the working end of the jaw 24 are curved at 27, which is their working face, to bear upon a staple and to press its two ends around a stringer, and the jaw 20 is recessed in pits 28 nearly semi-circular to receive the midway portions of the two arms of the staple.

10 The operation of using this wire-working tool in placing staples around fence wires is as follows: First, hold the tool right-side up, with an upright 11 in the slot 23 and a stringer 10 crossing between the jaws 20 and 22. Now
15 place a staple 12 in the recess made to receive it in the lower jaw beneath the stringer and around the upright, as shown in Figs. II and III. Then if the handles 15 16 be pressed toward each other the jaw 22 will descend upon
20 the stringer 10, and as the operation is continued the pressure thereon will force the staple 12 down into the pits 28, and as the cross portion 29 of the staple resting against the upright resists the lengthening of the sta-
25 ple necessary to reach into the pits, therefore the staple is forced against the upright so firmly as to indent the two together and to indent the other side of the upright a little into the stringer. Now, by closing the handle
30 of the jaw 24 firmly toward the handle 16, the jaw 24 will be brought into contact at a point 31 of its front curve with the bent-up ends of the staple, (shown in dotted lines 32,) and as the jaw 24 closes toward the jaw 20
35 these staple ends will be folded over the stringer and be firmly pressed thereon. Now, by swinging the handles apart, the tool may be removed from the fence, leaving the upright and stringer properly joined, as shown
40 in Fig. V. The uprights and stringers of common galvanized wire fence may thus be so firmly indented into each other that swaying by the wind and straining by stock cannot loosen them.

45 It is evident that one entirely separate tool might be made comprising the jaws 13 and 14 for heading the uprights upon the stringers, and another comprising the three jaws 20, 22, and 24 for securing the staples; but
50 as both of these operations have to be performed in securing each upright to a set of stringers in forming a fence, the combined tool has great advantage over two separate tools by being more quickly operated and less
55 expensive.

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

1. The combination in a wire working tool, of a jaw recessed in the form of a staple to support the same at its bend and at its ends; the said recess being deeper midway than at the ends; the same jaw being notched across the line of the staple recess about midway thereof and to a depth less than the recess in that region; and an opposite jaw having a straight bearing surface over the line of the said notch, substantially as described, whereby a staple laid in the said recess and overlaid by a stringer wire will be bent part way around the said stringer wire by closing the said jaws, the stringer being forced to do the bending and yet being kept straight itself by the notched jaws.

2. The combination of a pair of wire working tool jaws pivoted together, one of them having a plain face and the other recessed in the form of a staple with its legs pointed in the direction of the pivot; the said recess being deeper midway than at the ends; the same jaw being notched across the midway region of said recess; and a third jaw located within the said two jaws, and journaled upon the same pivot, and having curved working faces substantially as described whereby the closing of the first pair of jaws will bend the staple partly around the stringer and then the closing of the third jaw will complete the bending and closing of the staple upon the stringer.

3. The combination of a pair of wire working tool arms pivoted together, each arm having two jaws facing in opposite directions relative to movement around the pivot; one jaw of one arm adapted to approach and contact with one jaw of the other arm when the two arms approach each other, and the other jaw of one arm adapted to approach and contact with the other jaw of the other arm when the two arms recede from each other, substantially as described, whereby each pair of jaws may cooperate unlimited by the movement of the other pair.

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

JAMES O. MITCHELL.

Witnesses:

EMMA G. BRASHEARS,
WM. H. DELACY.