

No. 669,351.

Patented Mar. 5, 1901.

G. N. SCHINDEL.  
TOOL FOR TWISTING WIRES.

(Application filed Nov. 16, 1900.)

(No Model.)

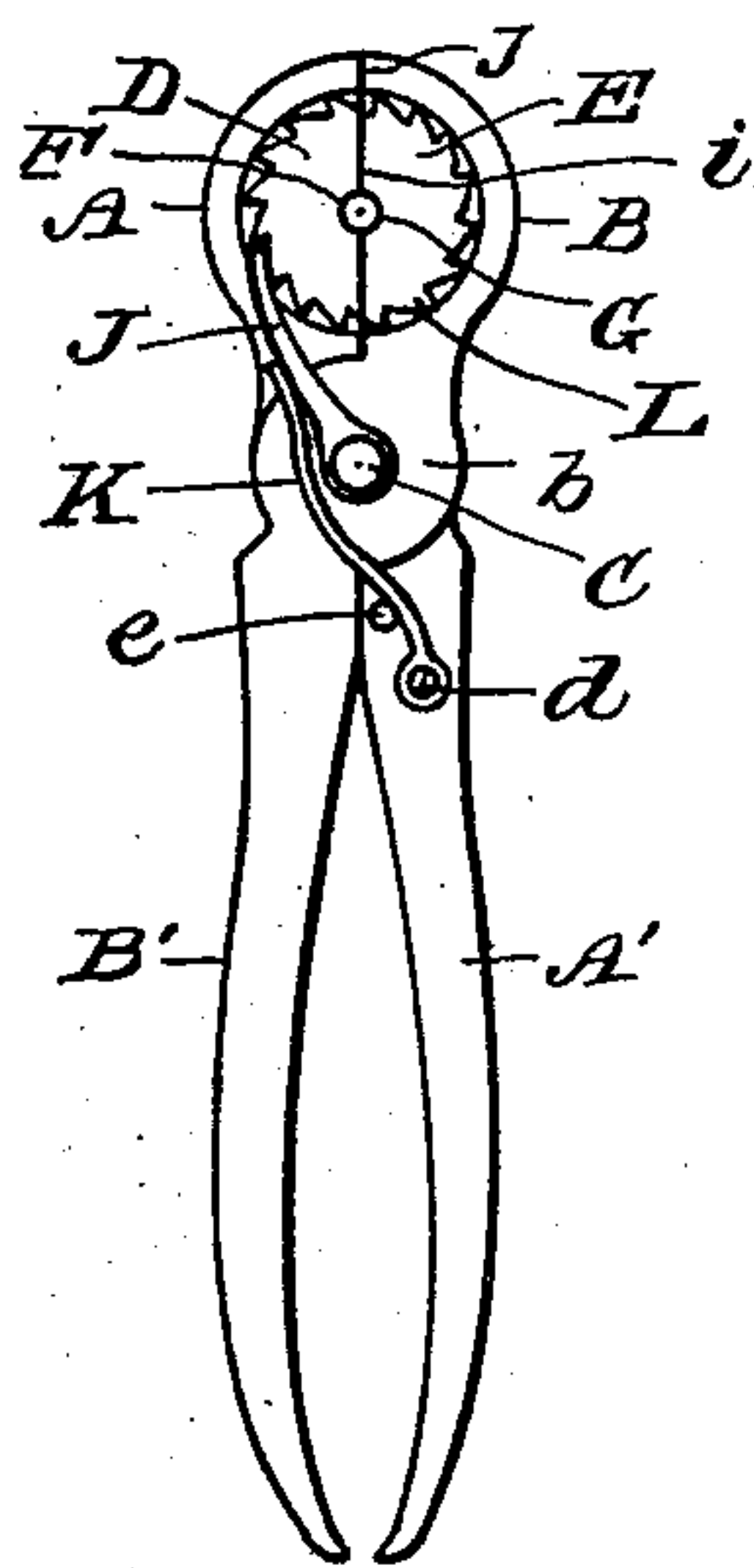


Fig. 1.

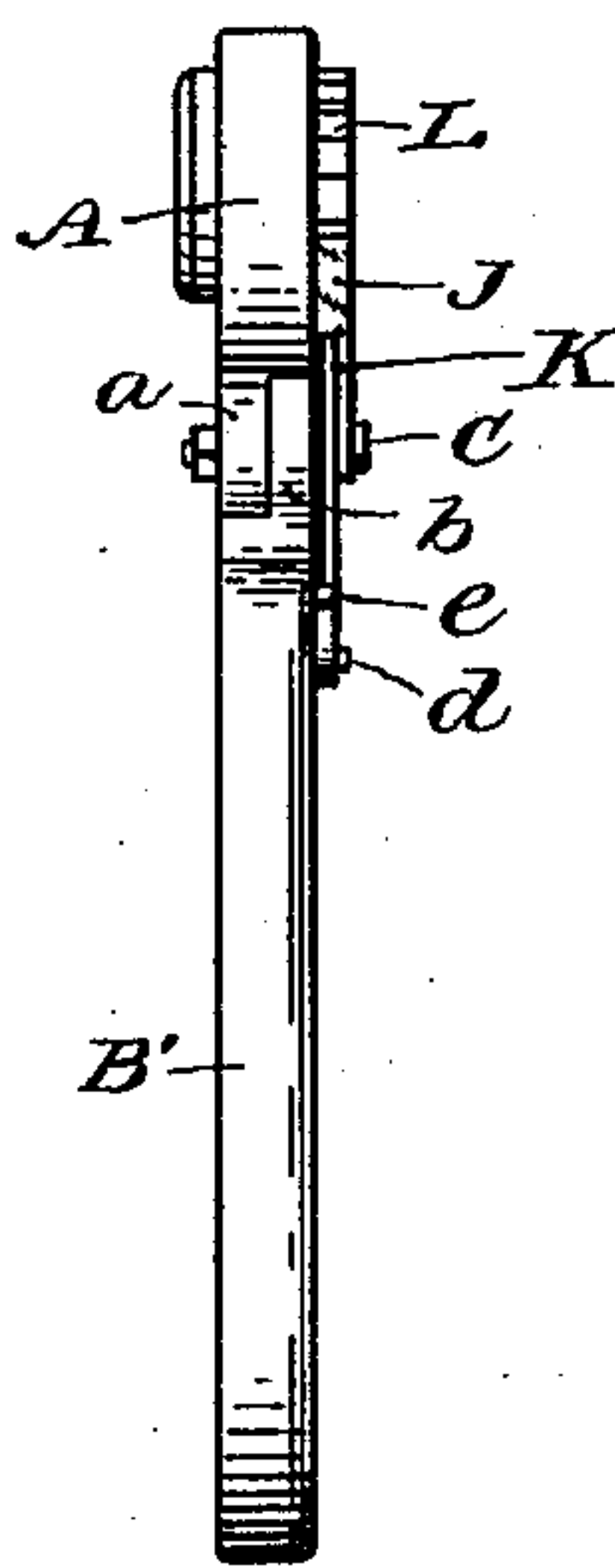


Fig. 2.

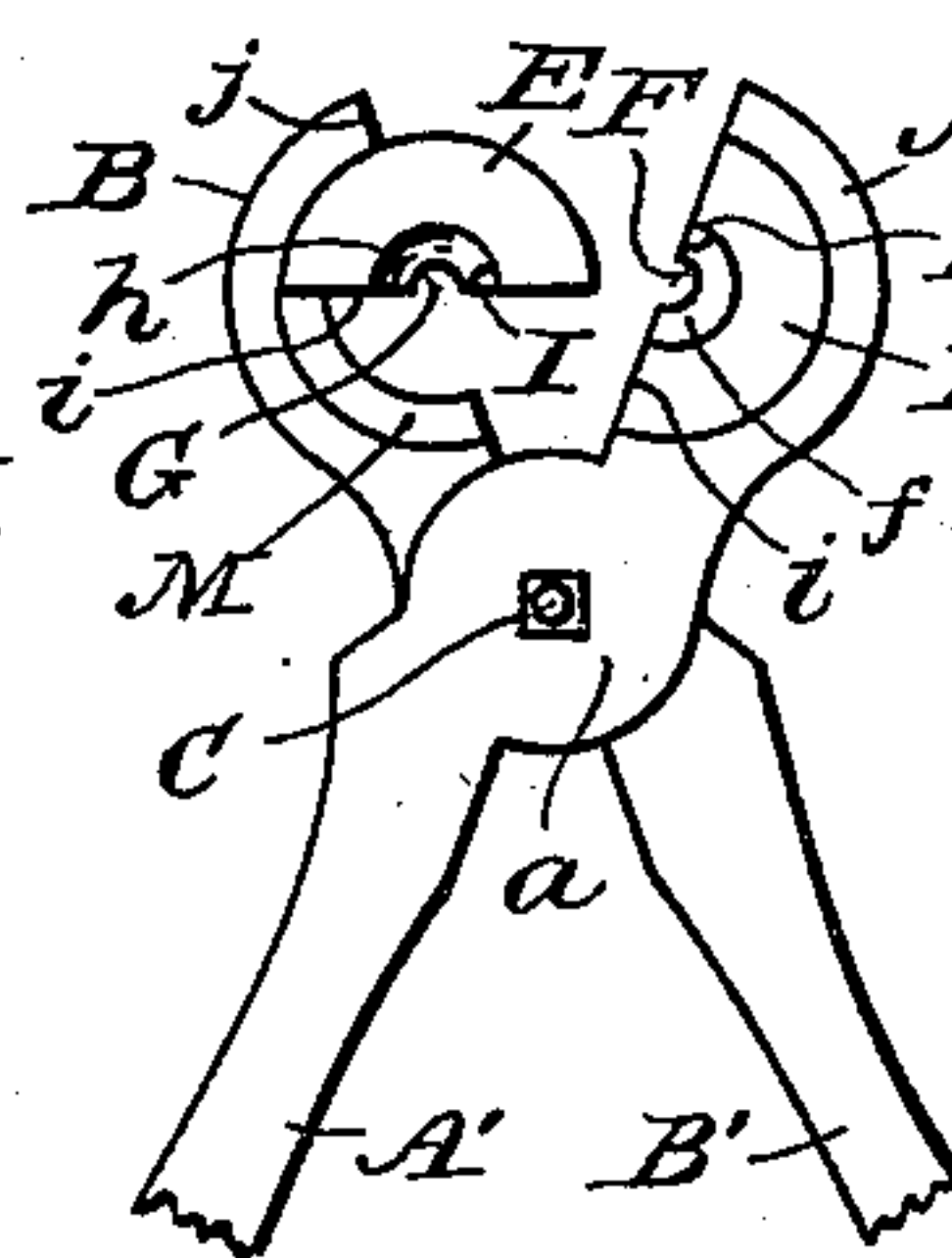


Fig. 3.

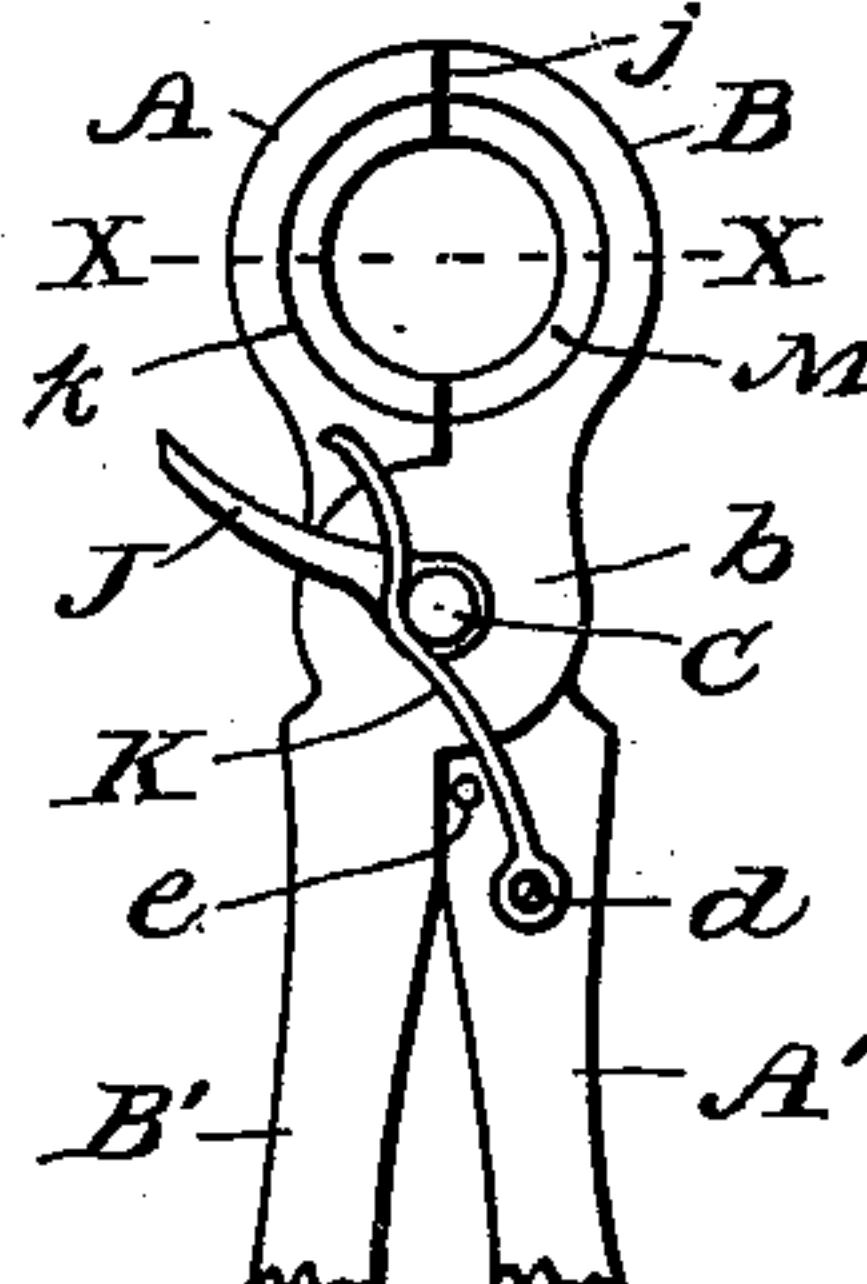


Fig. 4.

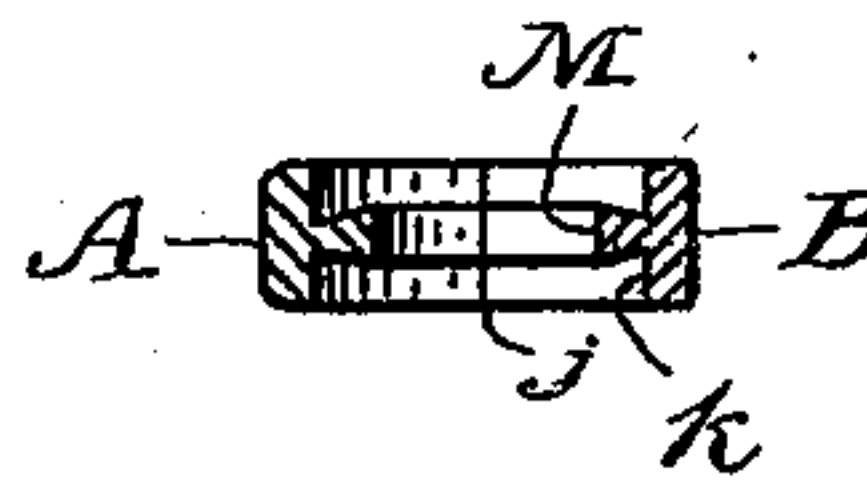


Fig. 5.

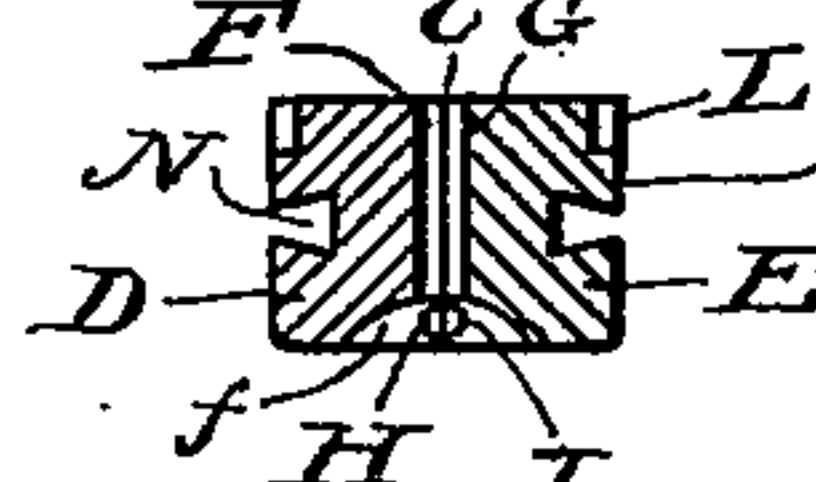


Fig. 6.

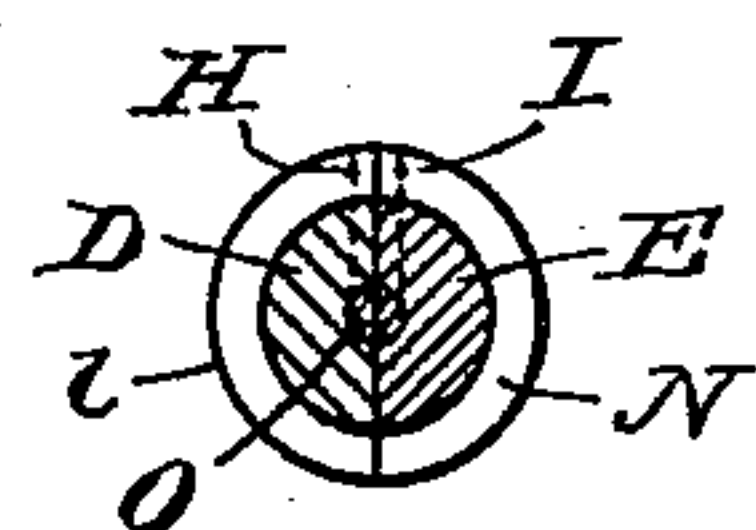


Fig. 7.

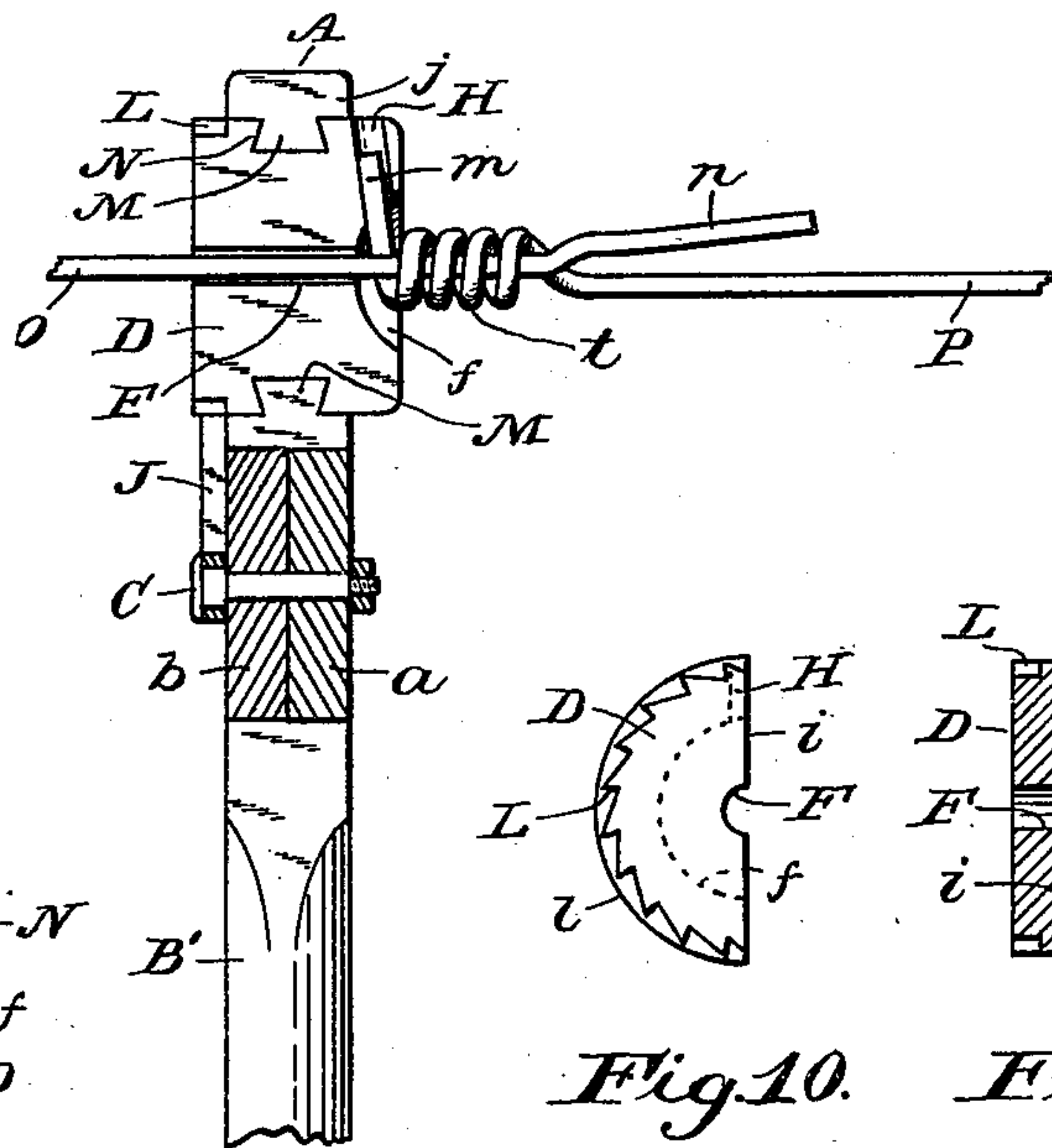


Fig. 9.

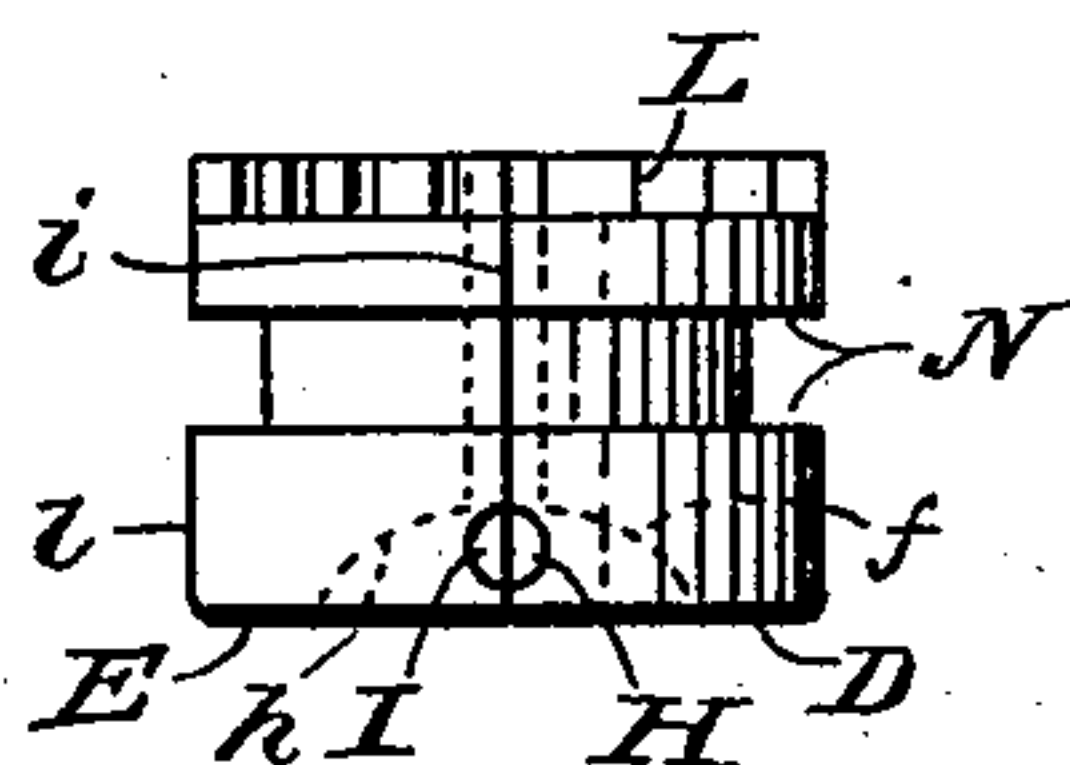


Fig. 8.

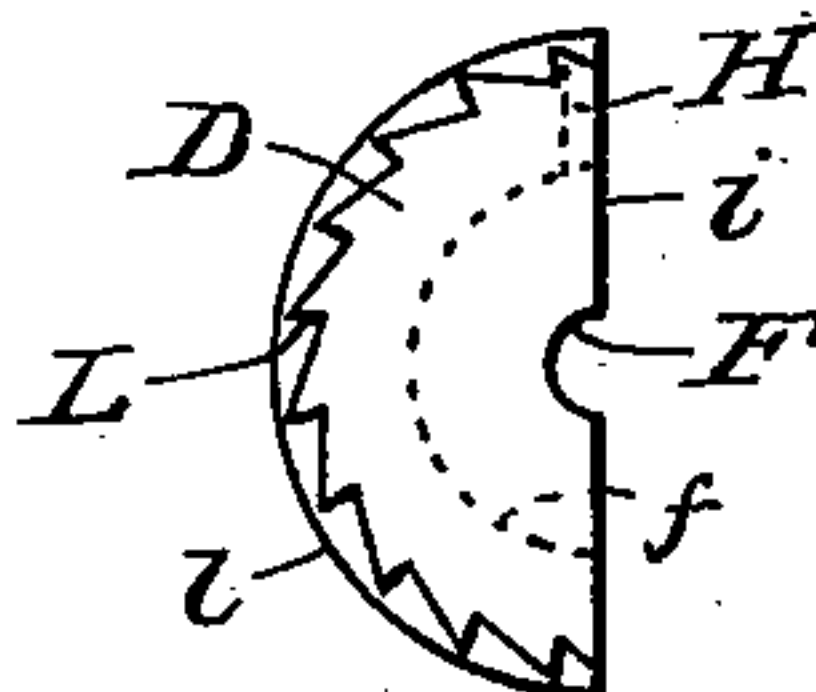


Fig. 10.

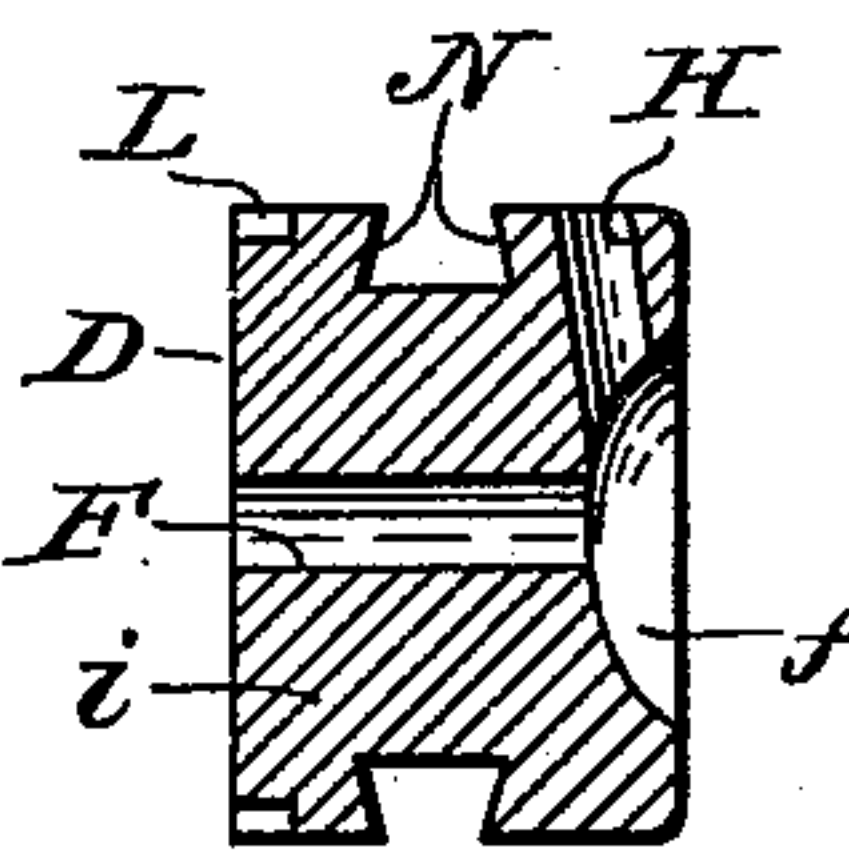


Fig. 11.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE N. SCHINDEL, OF CRAIGSVILLE, WEST VIRGINIA.

## TOOL FOR TWISTING WIRES.

SPECIFICATION forming part of Letters Patent No. 669,351, dated March 5, 1901.

Application filed November 16, 1900. Serial No. 36,661. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE N. SCHINDEL, a citizen of the United States, residing at Craigsville, in the county of Nicholas and State of West Virginia, have invented certain new and useful Improvements in Tools for Twisting Wires; and I do 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 the letters of reference marked thereon, which form a part of this specification.

My invention relates to a tool or implement that is designed to be used for twisting two wires or coiling one around another, as in joining the ends of two wires together or in joining the end of one wire to another, employed more particularly in splicing telegraph and telephone wires, mending wire fences, &c., the object of the invention being to provide a tool of this character by which a wire may be coiled or wrapped around another with a ratchet motion, thereby obviating the necessity of carrying the entire tool around the wire, as must be done when performing such operations by the use of pliers or the like.

The object is fully attained in this invention, which is simple, cheaply constructed, and durable in use, saving much time and enabling the operator to make a neat and electrically-close connection of the wires.

The invention consists in a pair of pivoted tong-shafts and a halved ratchet-operated leader rotatively mounted in the shafts, all of new and novel form of construction.

Referring to the drawings, Figure 1 is a front elevation of a tool embodying my invention, showing the parts closed as when in use; Fig. 2, a side elevation thereof; Fig. 3, a fragmentary rear elevation showing one-half of the halved leader in a position as when being inserted or removed from the head of the tong-shaft; Fig. 4, a fragmentary front elevation similar to Fig. 1, but with the leader omitted and the ratchet-pawl disconnected from its spring; Fig. 5, a transverse sectional view on a line  $x x$  in Fig. 4; Fig. 6, a transverse sectional view taken parallel with the axis and at a right angle to the natural parting-line of the halved leader; Fig. 7, a trans-

verse sectional view of the leader, taken on a line at a right angle to the axis thereof; Fig. 8, a view in elevation of the leader; Fig. 9, a longitudinal central sectional view taken on the natural parting-line of the leader and showing operative positions of wires when operated upon by the tool; Fig. 10, a front plan view of one part of the halved leader, and Fig. 11 a central sectional view of the leader as it would appear if formed solid and cut in two longitudinally through its axis.

Similar reference-letters in the several figures of the drawings designate similar parts.

In construction I provide two members similar in some respects to tong-shafts; but the portions usually designed for gripping are constructed in a distinctly different form and for a different purpose. These shorter ends as measured from the pivot I term the "heads" A B of the shafts and the longer ends A' B' the "handles," being designed to be grasped by the hands of the operator. The shafts have near the heads thereof suitable flattened portions  $a b$ , respectively, through which a pivot-bolt  $c$  is inserted in suitable holes, thus pivotally connecting the two shafts in the usual manner in which pliers are connected. The two parts A and B may as a whole be termed a "head," adapted to be opened, but which is closed normally when in operation.

The leader is composed of two parts D and E, which together are in the form of a cylindrical rotating sleeve having a circular main bore of suitable diameter to freely admit a wire to be operated upon, the bore being axial to the sleeve and the leader being suitably mounted rotatively in the head. The bore is formed by a groove F in the part D and a groove G in the part E of the leader. At one end of the leader is a recess  $f h$ , from which a circular lateral bore is made in a line transverse to the main bore and extending to the periphery  $l$  of the leader. This lateral bore may be made in the solid metal of the part; but I prefer to form it, as shown, by cutting a groove H in the parting face of the part D and a like groove I in the part E of the leader, this lateral bore so formed being the same in diameter as the main bore and adapted to receive the end of the wire that is to be wrapped around another wire. The recess  $f h$  is also cut partly in each half of the leader and is



central and circular. At one end of the leader, preferably the end opposite the recess, are arranged a series of ratchet-teeth L around the periphery of the sleeve-like form, and a suitable pawl J is pivoted, preferably, on the bolt C and engages the teeth, the pawl being pressed by a suitable spring K, suitably supported by one of the tong-shafts, a preferable manner being by means of a screw *d*, entering the handle A', and a stud *e*, arranged as a fulcrum for the spring, the spring being somewhat long, so that it may be forced off the pawl to one side thereof, as shown in Fig. 4, thereby releasing the pawl from the teeth.

The leader, while being adapted to rotate in the head, is so connected thereto that when the head is open either half of the leader may be retained by either part of the head. This may be suitably accomplished by first closing the head and then making a bore of suitable size and then counterboring from each side to provide a bearing *k* for the periphery *l* of the leader, leaving a rib M, that is broader at its top than at its bottom. Then a groove N, adapted to receive the rib, is cut in the periphery of the leader. If now the opposing faces *j* at the natural parting-line of the parts A and B be slightly cut away, the leader may be clamped by the head, so that in the small sizes of tool the ratchet-teeth and pawl may be dispensed with and the leader rotated solely by means of frictional engagement with the head.

In some cases I may arrange the head A B so as to inclose the ratchet-teeth, and the latter may be placed in other suitable positions. Also the pawl may be so arranged as to be disengaged automatically from the teeth each time the head is opened. I may also employ a spring for opening the head and the leader.

In practical use the handles A' B' may be drawn apart, opening the head and the leader, the latter being then closed over a wire O, which will be covered in the main bore. The end *m* of another wire P may then be inserted in the lateral bore. The wire P and the end *n* of the wire O may then be clamped together in a suitable device, as is customary, and by then rotating the leader D E the end *m* will be led around the wire O as a coil *t* or the two wires O and P "twisted." The tool may then be removed and its position reversed, the end *n* placed in the lateral bore and the leader rotated in a reverse direction, so as to form a coil of the end *n* around the wire P, which runs through the main bore, thus completing the joint, after which the tool may be removed by opening the head and the leader.

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

1. A tool for twisting wires including a halved head having a circular bore therein, handles for the head, a halved circular leader mounted revolubly in the head and having a central axial bore and having also a lateral bore extending to the periphery of the leader.

2. A tool for twisting wires including a circular halved leader having a central axial bore therethrough and having also a lateral bore, a halved head having a circular bore rotatively supporting the leader therein, the two parts of the head being pivoted together and each part having a handle.

3. A tool for twisting wires comprising a cylindrical halved leader having a central axial bore and a lateral bore intersecting the axial bore, a recess at the intersection of the two bores, a head adapted to open and rotatively supporting the leader, and means whereby the parts of the leader may be retained by the parts of the head when open.

4. A tool for twisting wires comprising a cylindrical halved leader having a central recess at one end thereof and having an axial bore central with the recess, and having also a lateral bore extending from the recess to the periphery of the leader, a head adapted to open and rotatively supporting the leader, and means for operating the head and the leader.

5. A tool for twisting wires, comprising a pair of pivoted shafts each having a part which may join and form a complete head having a circular bore therein, a halved cylindrical leader having a peripheral groove, a rib in the head engaging the groove, said leader having a circular recess in one end thereof and a main bore central with the recess and having also a lateral bore extending from the recess, ratchet-teeth on the leader, and a spring-pressed pawl mounted on one of the shafts and engaging the ratchet-teeth.

6. The combination of the pivoted shafts, the halved head, the halved leader having the main bore and the lateral bore and also the recess and rotatively mounted in the halved head, the ratchet-teeth on said leader, the pawl, and the pawl-spring, substantially as set forth.

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

GEORGE N. SCHINDEL.

Witnesses:

GROVER BLANKENSHIP,  
HOMER FITZWATER.