

(No Model.)

P. A. H. FREDERICK & J. M. RIEDEL.
COMBINATION TOOL FOR NURLING, MILLING, SCREW CUTTING,
TURNING, AND GROOVING METAL.

No. 523,854.

Patented July 31, 1894.

Fig. 1.

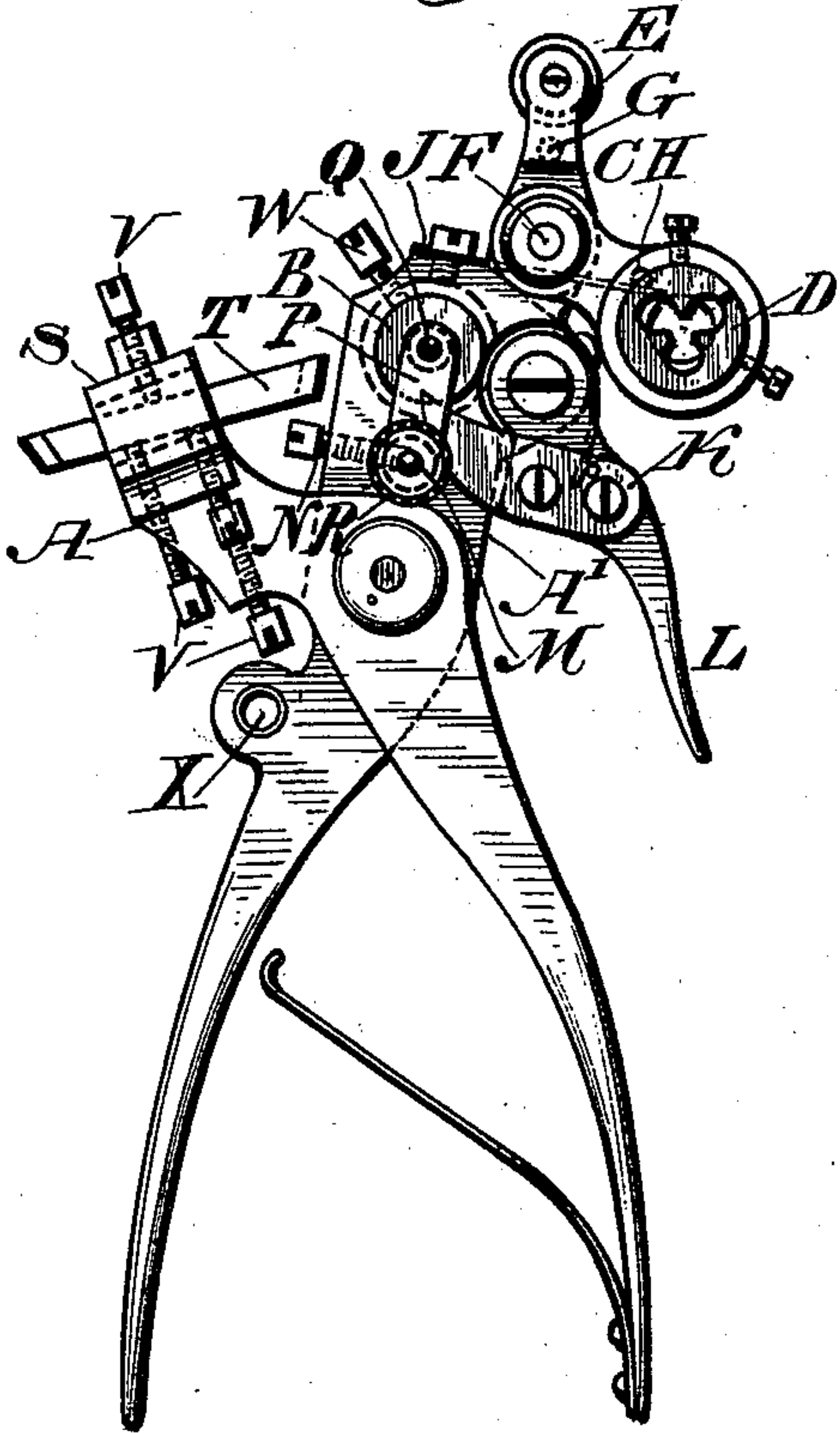


Fig. 2.

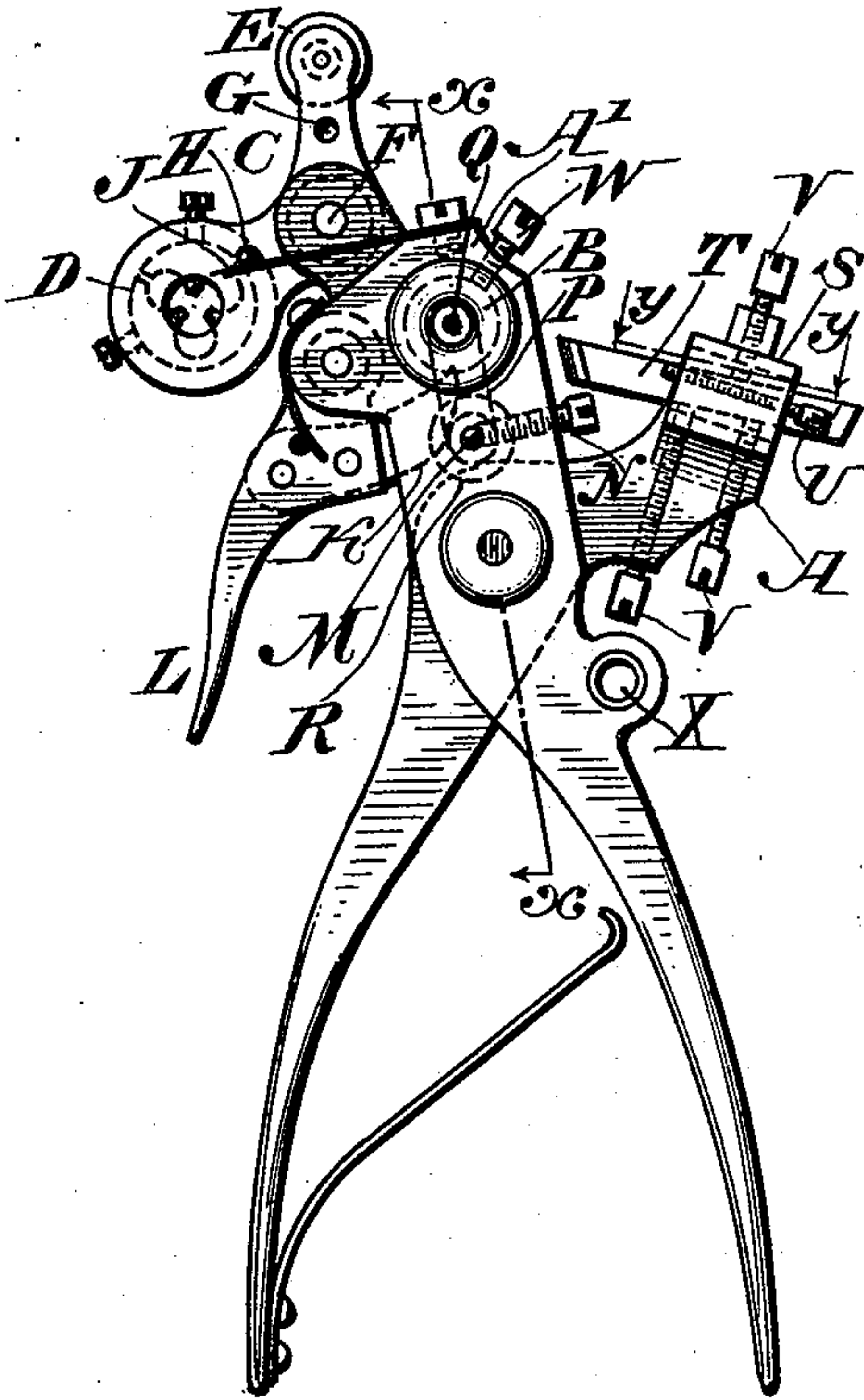


Fig. 3.

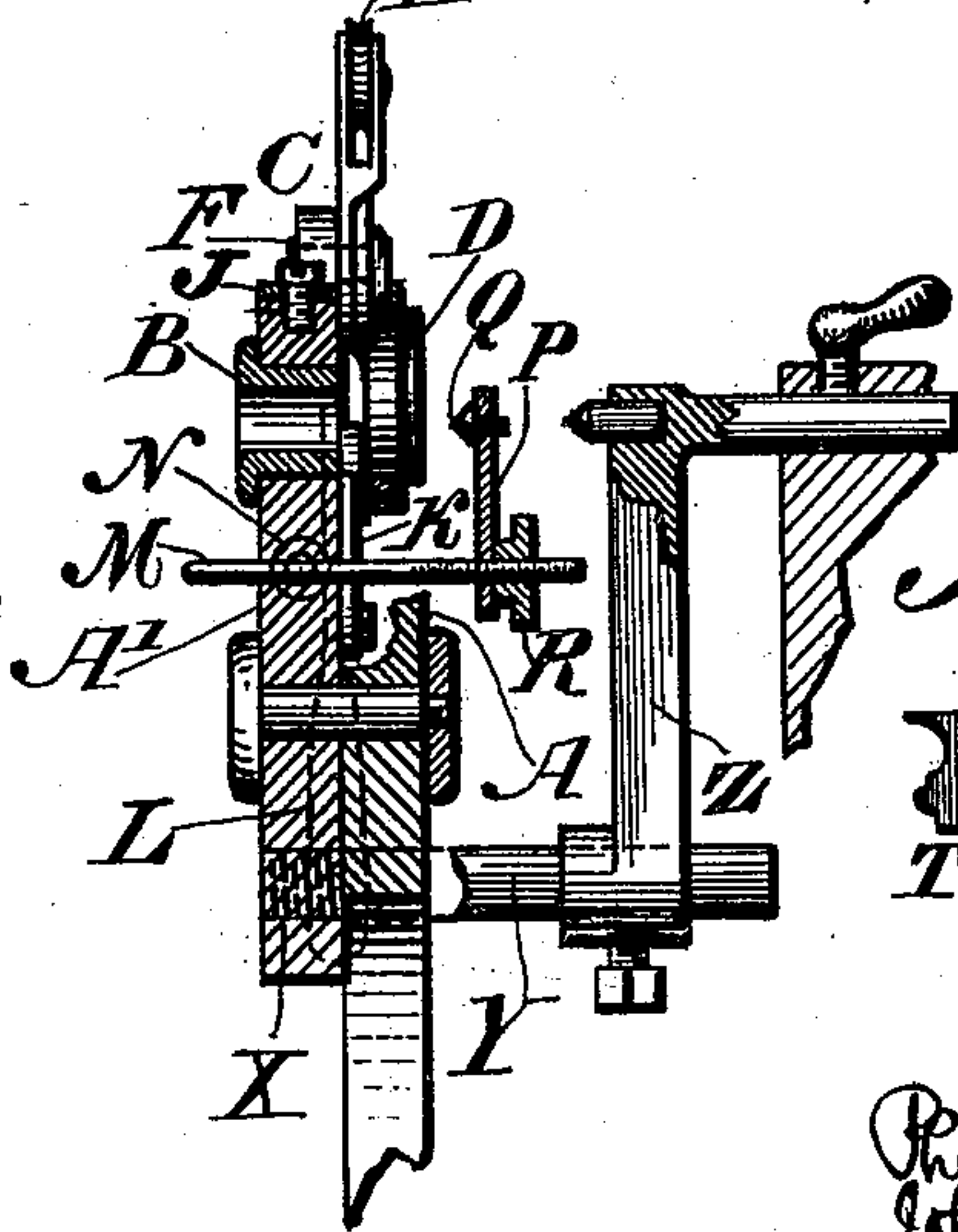
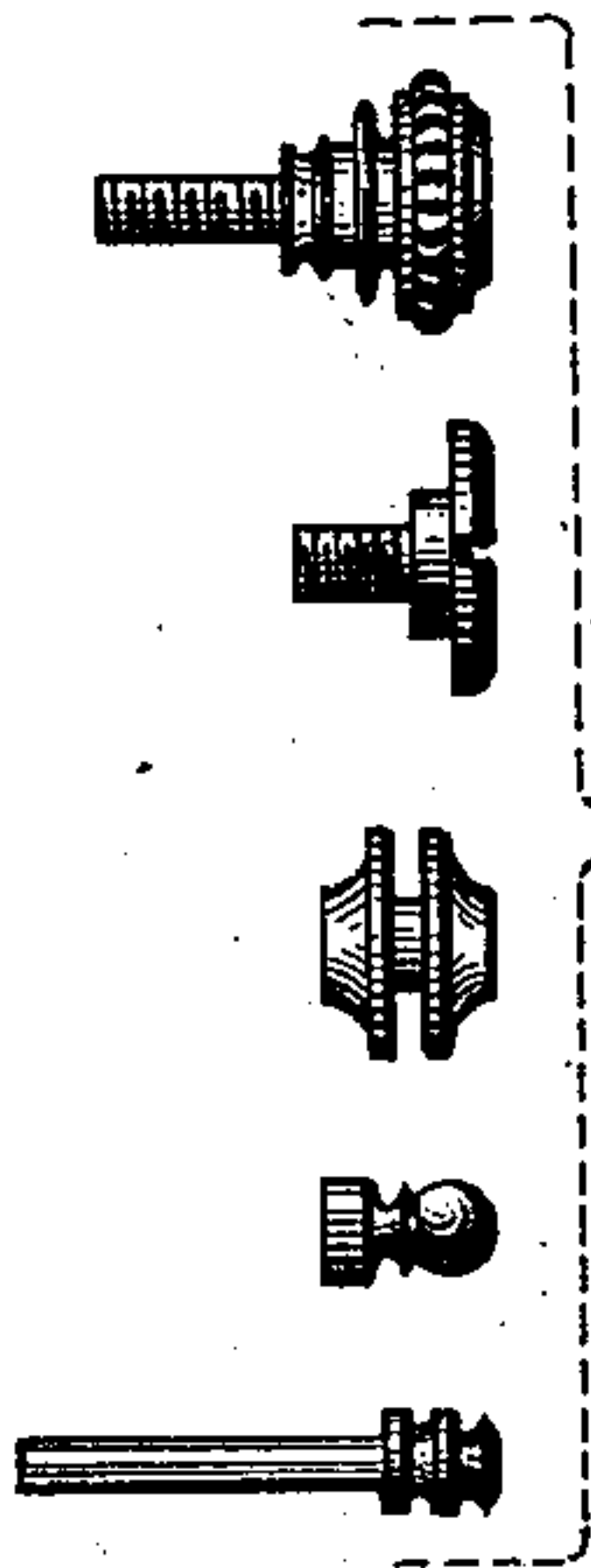


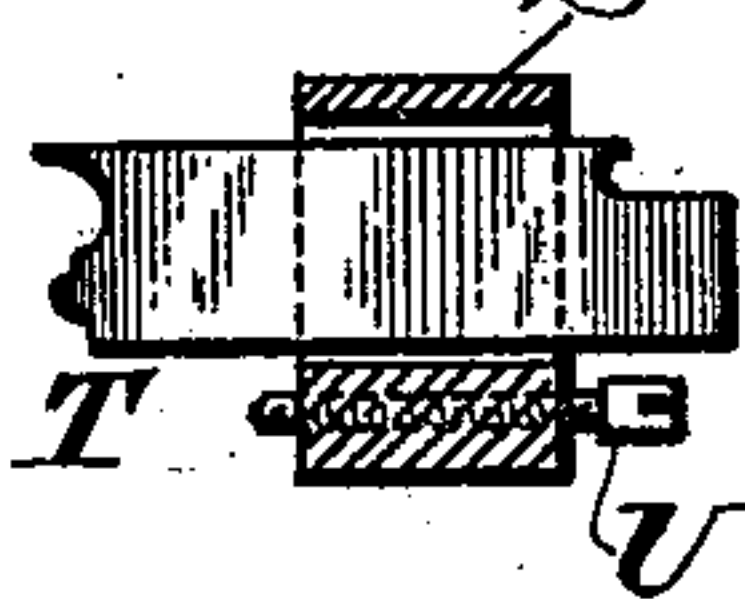
Fig. 5.



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Fig. 4.



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UNITED STATES PATENT OFFICE.

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COMBINATION-TOOL FOR NURLING, MILLING, SCREW-CUTTING, TURNING, AND GROOVING METAL.

SPECIFICATION forming part of Letters Patent No. 523,854, dated July 31, 1894.

Application filed February 5, 1894. Serial No. 499,166. (No model.)

To all whom it may concern:

Be it known that we, PHILLIP A. H. FREDERICK and JOHN MELCHIOR RIEDEL, citizens of the United States, both residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Combination-Tools for Nurling, Milling, Screw-Cutting, Turning, and Grooving Metal, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a combination tool, involving means for screw-cutting, nurling, milling, turning, grooving or otherwise operating upon metal, the parts of the same being hereinafter set forth.

It also consists in providing the tool with an adjustable center.

Figures 1 and 2 represent views of opposite sides of a combination tool embodying our invention. Fig. 3 represents a section of a portion on line *x, x*, Fig. 2. Fig. 4 represents a section of a portion on line *y, y*, Fig. 2. Fig. 5 represents a side elevation of work accomplished by the tool.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A, A' designate handled jaws in one of which is an opening which is occupied by the bushing B to receive a piece of wire or other metal to be operated upon.

C designates an elbow lever, one limb of which carries a screw-cutter or tap D, and the other limb carries the milling or nurling tool E, said lever being pivotally mounted on the jaw A' at F, whereby the tap D or the tool E may be placed adjacent to the bushing B.

In order to hold the lever C, there is formed in the same the socket G, which is adapted to receive the stud H, which is secured to the spring J, the latter being connected with the jaw A', so that when the stud enters said socket, the lever is controlled, and when power is applied to said lever to overcome the holding action of the stud, said lever may be shifted or returned to its normal position. Mounted on the jaw A' is a blade K, which is provided with a handle L, so that the cutting edge of said blade may be advanced to-

ward or removed from the bushing B. Freely passing through the jaw A', near the axis thereof, is a rod M which is adjustably held in position in said jaw by means of the screw N, one end of said rod being screw-threaded, and having fitted thereon the arm P, which is provided with the center Q, which latter may be set opposite to the bushing B for lathe or other purposes, as will be most plainly seen in Fig. 3.

In order to hold the arm P in position, a nut R is fitted on the rod M, and adapted to tighten against said arm the provision of threads on the rod M and said nut R, permitting of nice adjustment of the arm, and consequently of the center thereon.

On the jaw A is a boss S, in which is placed the cutting tool T, whose edge or point may be advanced to or toward the bushing B, so as to operate on the piece of metal in the latter. In order to adjust the closing motion of the jaw A, and the consequent forward motion of the tool T, a screw U is passed through the wall of the boss S, and has its point adapted to strike the adjacent side of the jaw A, as will be seen in Figs. 2 and 4, it being evident that the extent of protrusion of the point of the screw regulates the motion of the jaw A'. The tool T is held in place by screws V in the boss S and the bushing B is controlled by a screw W in the jaw A'.

It is evident that when a piece of metal is placed in the bushing B, it may be held or limited in its motions therethrough by the center Q. The tap D, nurling tool E, cutter K or tool T may be brought into service according to the work to be performed, some forms of the work being shown in Fig. 5.

In the handle portion of one jaw is an opening X, which is adapted to receive the rod Y of the center post Z of a lathe, as shown in Fig. 3. In this case the center Q is thrown back, and the tool is supported on said rod Y, while the operations of the tool are being accomplished, the blank or piece of wire or other metal operated upon occupying the bushing or opening in the jaw A, so as to be held therein during said operations.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A combined metal working tool comprising a jaw provided with an opening and having a swinging lever, and a screw-tap and nurling tool on said lever, substantially as described. 5
2. A combined metal working tool comprising a jaw provided with an opening, and having a swinging lever with tools thereon, and a locking stud for said lever, substantially as described. 10
3. A combination tool having two pivoted jaws with handles thereon, a boss on one of said jaws adapted to hold a cutting tool therein, and a blade pivoted to the other jaw, 15 and provided with a handle, said parts being combined substantially as described.
4. A combination metal working tool having pivoted jaws with handles, one of said jaws having an opening to receive a blank of 20 metal, and in its handle portion an opening to receive the rod of the center post of a lathe, substantially as described.
5. A combination metal working tool having a pivoted jaw with an opening to receive a blank piece of metal, a rod freely passing 25 through said jaw near its pivot and screw-threaded at one end, an arm adjustable on said threaded end and provided with the center M, and a lever pivoted to said jaw and carrying a burring tool, substantially as described. 30
6. Handled jaws in combination with a swinging lever on one of the jaws, screw-cutting and nurling tools on said lever, a blade mounted on said jaw, and a cutting tool 35 mounted on the other jaw, the jaw carrying said lever having an opening for receiving a blank or piece of metal to be operated upon relatively to said tools and blade, said parts being combined substantially as described.

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