

(Model.)

H. E. WOODS.
TAP AND REAMER WRENCH.

No. 294,104.

Patented Feb. 26, 1884.

Fig. I.

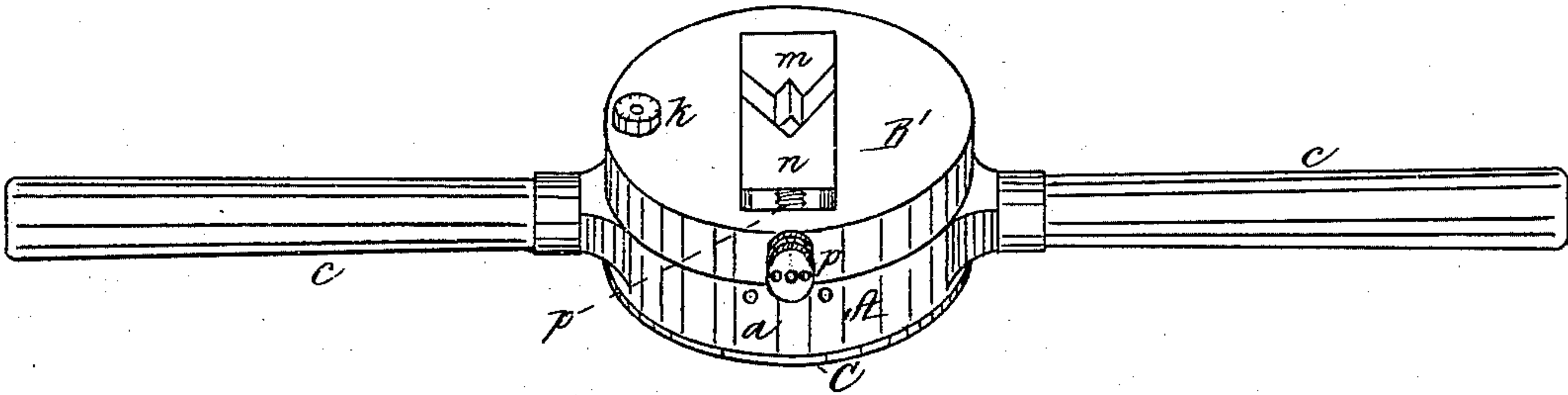


Fig. II.

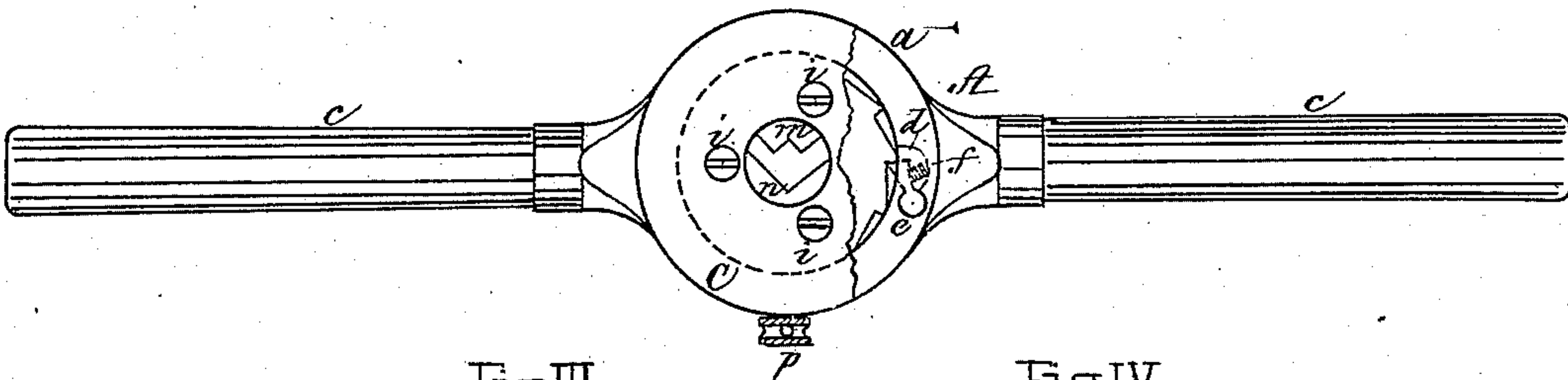


Fig. III.

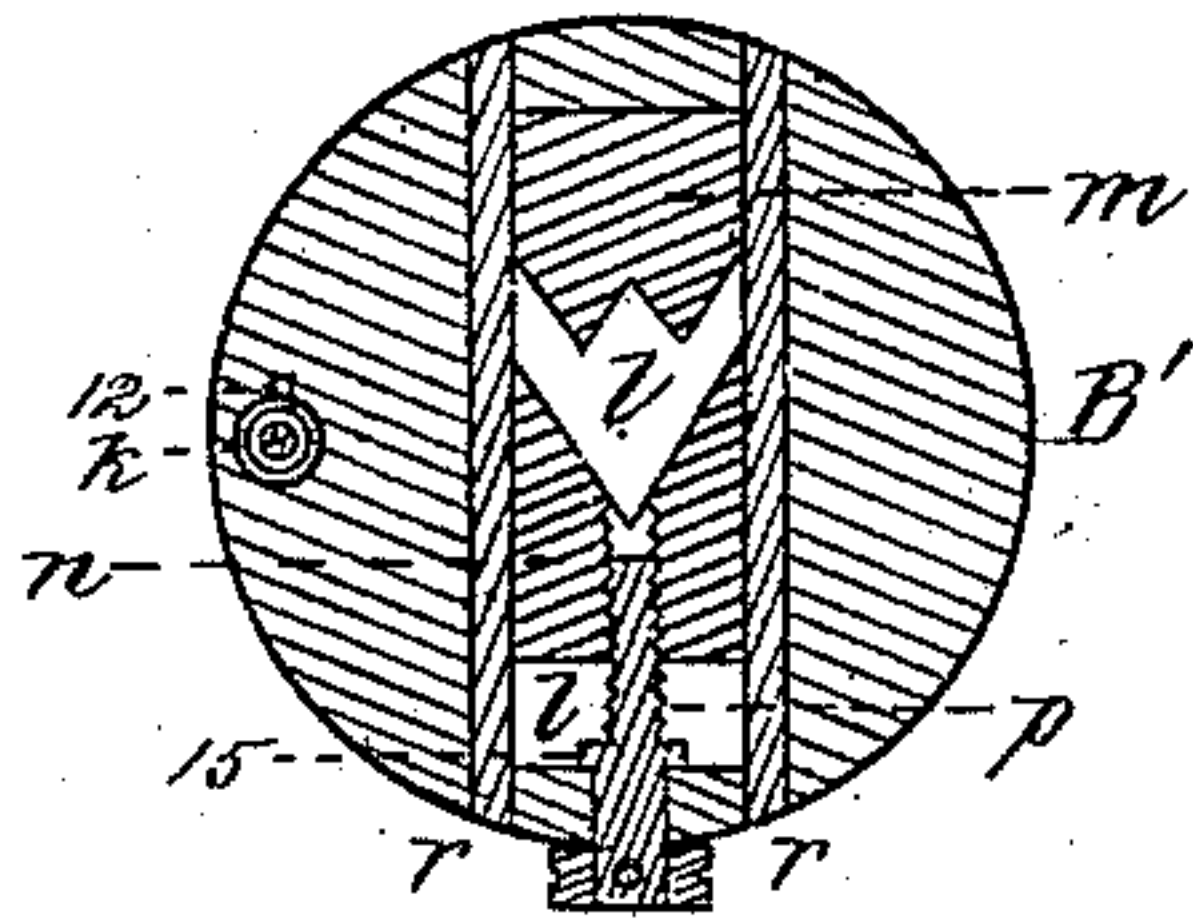


Fig. IV.

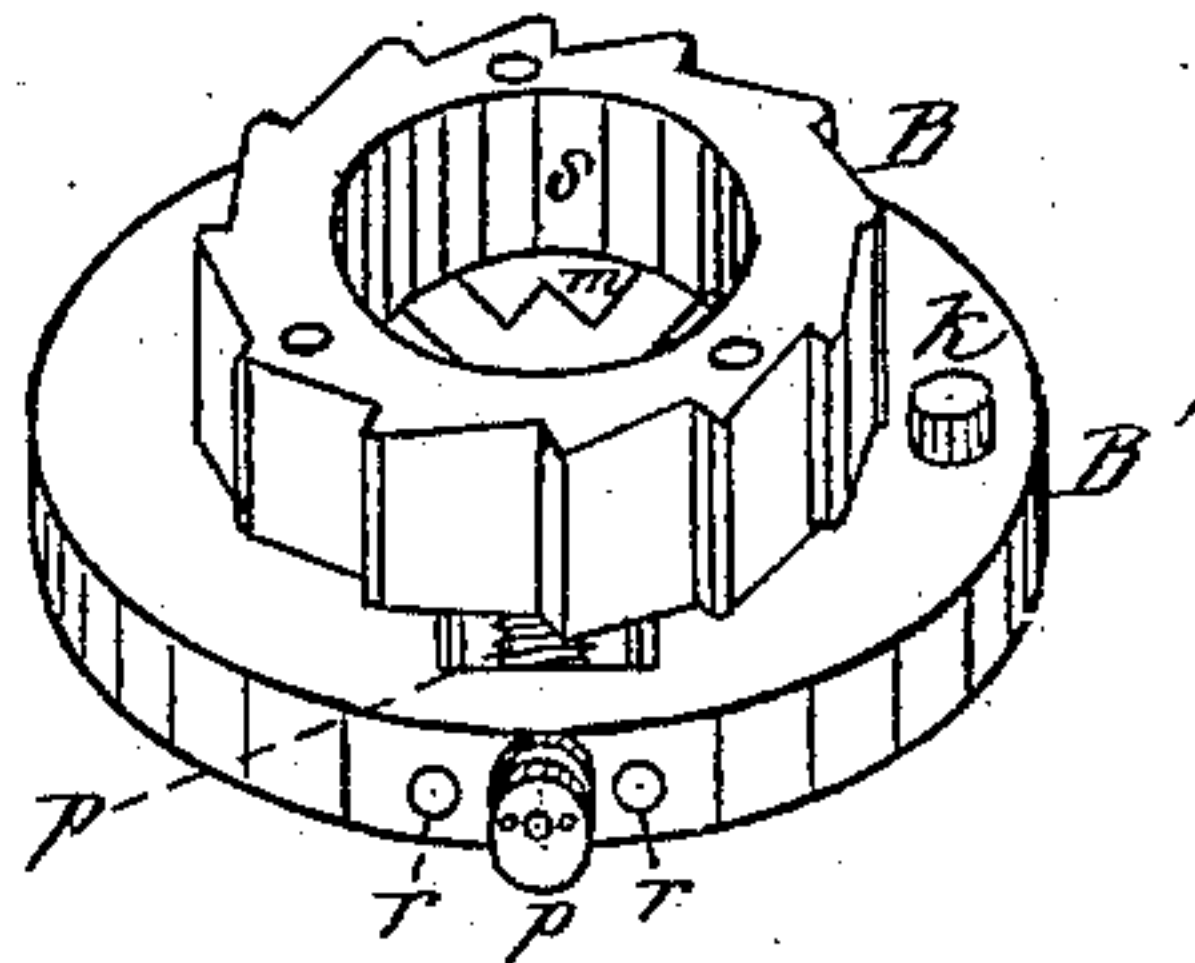


Fig. V.

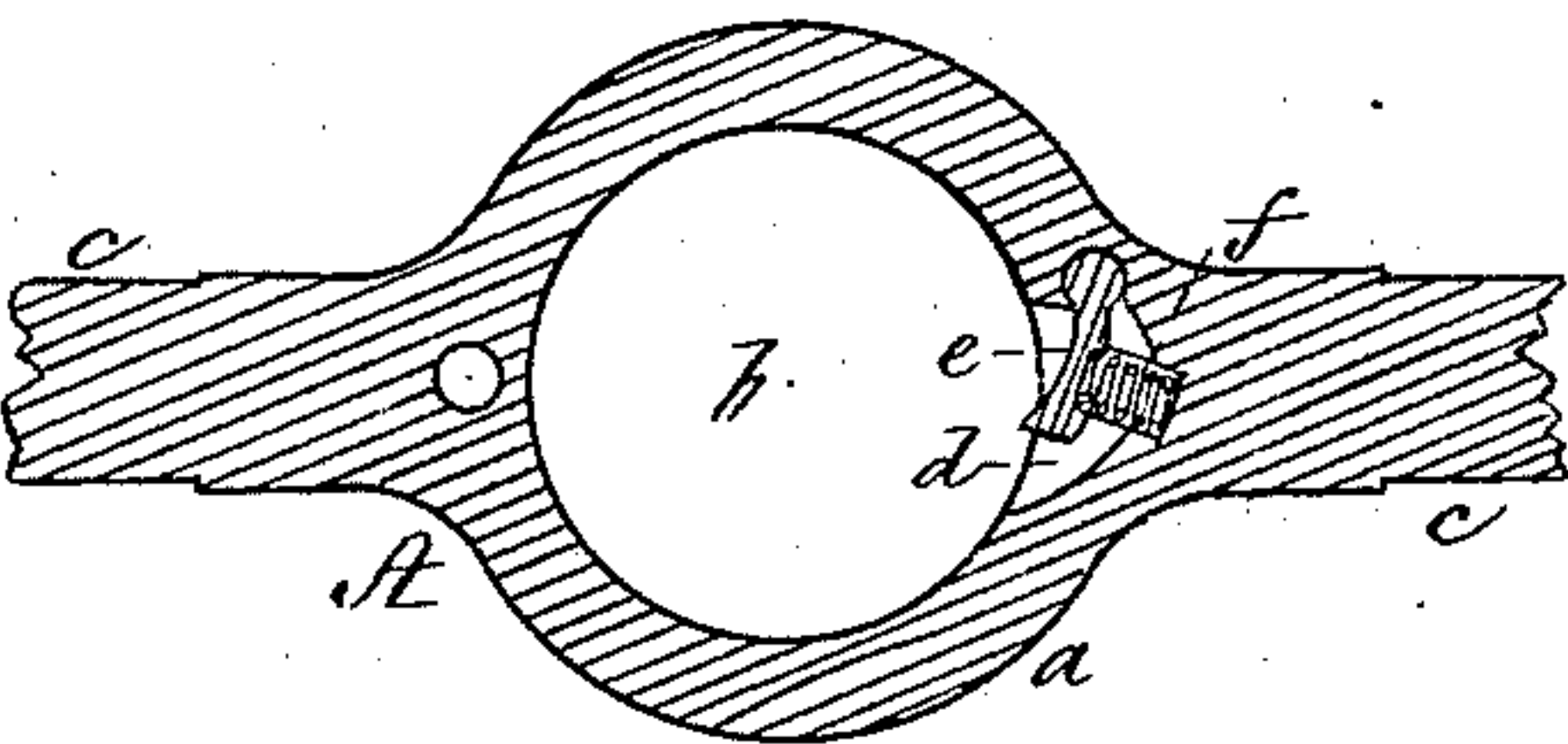


Fig. VI.

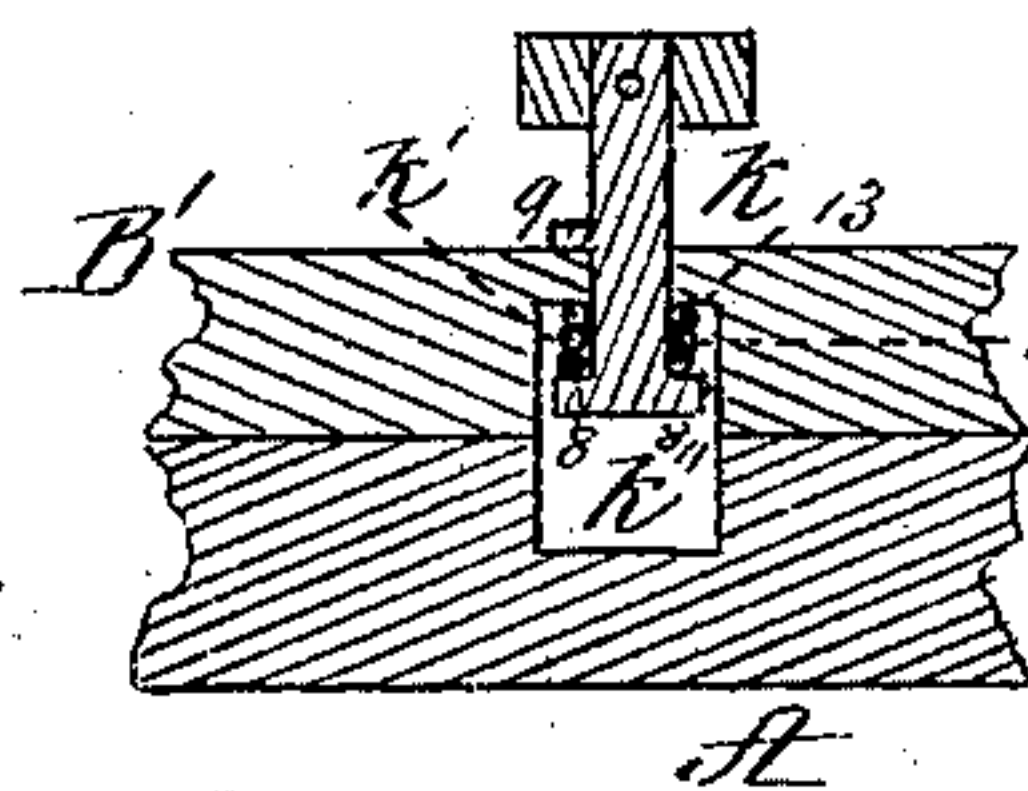
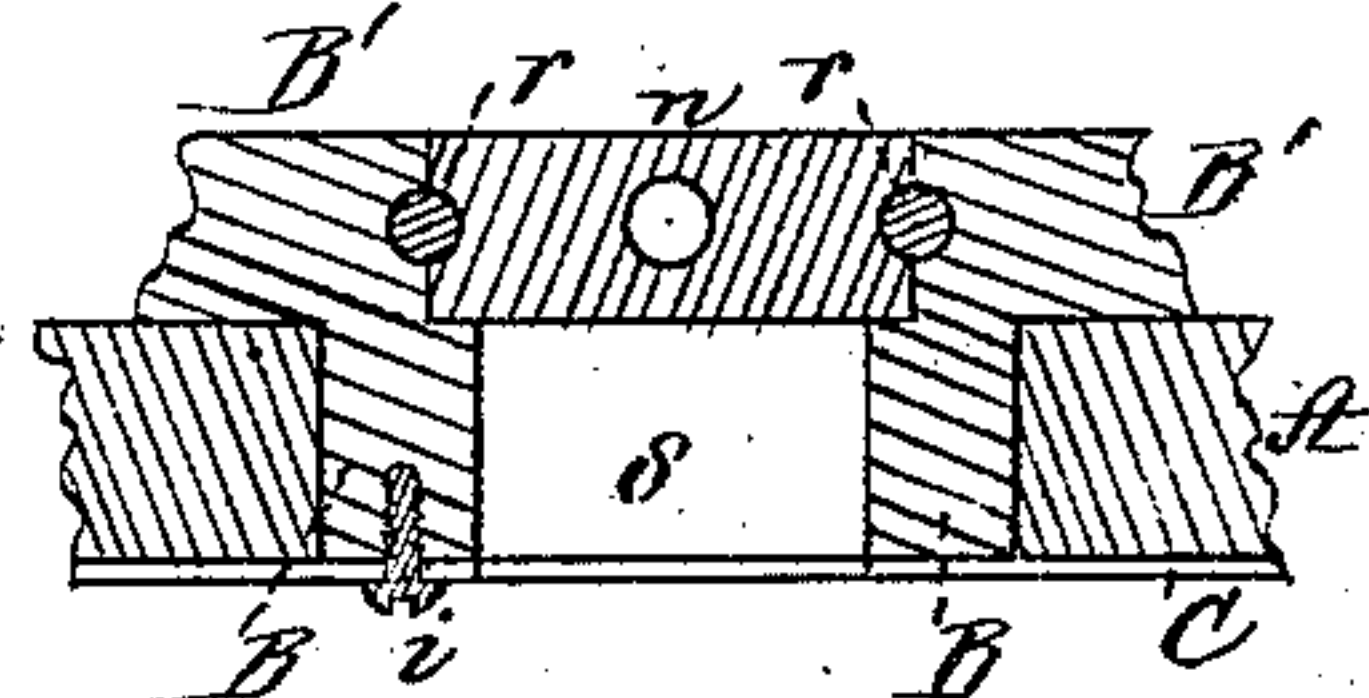


Fig. VII.



Witnesses,
C. J. Stearns
J. W. Stearns,

Inventor,
Harry E. Woods,
per Norman W. Stearns,
Attorney

UNITED STATES PATENT OFFICE.

HARRY E. WOODS, OF WEST SOMERVILLE, MASSACHUSETTS.

TAP AND REAMER WRENCH.

SPECIFICATION forming part of Letters Patent No. 294,104, dated February 26, 1884.

Application filed May 24, 1883. (Model.)

To all whom it may concern:

Be it known that I, HARRY E. WOODS, of West Somerville, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Tap and Reamer Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a tap or reamer wrench constructed in accordance with my invention. Fig. 2 is a plan of the under side of the same, a portion of the covering-plate being broken away to show the location of the ratchet and pawl. Fig. 3 is a horizontal section, representing the construction of the gripping-jaws and their arrangement within the ratchet-block. Fig. 4 is a view of the ratchet inverted. Fig. 5 is a horizontal section through the tool-holder; Figs. 6 and 7, sectional details to be referred to.

My present invention relates particularly to that class of wrenches provided with a central enlarged portion for the accommodation of a pair of jaws, and with a pair of handles arranged diametrically opposite each other, said wrenches being designed for use for operating taps, reamers, &c.; and this invention consists in a ratchet-block having a slot in which are located a pair of jaws, one or both of which are capable of adjustment for grasping the head of the working-tool, in combination with a stock or holder provided with a central hollow portion for the reception of the ratchet, and with one or more spring-pawls to engage with the latter, said ratchet being held within the holder by an adjustable pin or other device when the work is in progress, and being liberated so as to allow of the independent rotation of the holder into a position for the successive advancement of the tool.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents a stock or holder consisting of a centrally-located enlarged portion, *a*, having a circular opening, *b*, formed therein, and a pair of handles, *c c*, arranged diametrically opposite each other.

Communicating with the opening *b* is an aperture, *d*, in which is located a pawl, *e*, having at its back a spring, *f*.

B is a ratchet formed on the under side of and preferably integral with the circular block B', which is of the same diameter as and rests upon the upper side of the enlarged portion *a* of the holder A, said ratchet B (seen inverted, Fig. 4) fitting into the opening *b*, and being held in place therein by a thin circular plate, C, screwed to the ratchet at *i i i*, Figs. 2 and 7. *k* is a pin passing through a hole, *k'*, Fig. 6, in the ratchet-block B', and entering a hole, *k''*, in the central enlarged portion of the holder A, said pin having a shoulder, 8, formed at its bottom and a projection, 9, under its head, and the hole *k'* in the ratchet-block B' having an aperture, 12, Fig. 3, at its side, to allow of the passage therein of the projection when brought in line therewith. The diameter of the hole *k'* is enlarged below its top, to form a shoulder, 13, between which and the shoulder 8 (surrounding the pin *k*) is a spiral spring, 14, Fig. 6, to insure its retention in the hole *k''*, and thus prevent the ratchet from rotating independently of the stock when the tap or reamer is doing its work, the withdrawal of the pin *k* from the hole in the stock (against the resistance of the spring 14) leaving the stock free to be carried back or rotated independently of the ratchet, in order to take a new hold upon and continue to advance the same when the forward movement of one of the handles *c* has been arrested by contact with a contiguous object. When the pin *k* is withdrawn from the hole in the stock, it is kept from returning therein by partially rotating it till its projection 9 is brought to one side of the aperture 12, and allowing it to bear on the upper surface of the ratchet-block, Fig. 6.

Extending down through and at the center of the ratchet-block B' is formed a rectangular slot, *l*, in which is located a stationary jaw, *m*, and a movable jaw, *n*, capable of being adjusted to and from the former by a thumb-screw, *p*, which passes through the side of the ratchet-block B into the slot and into a screw-threaded hole, *q*, formed in the movable jaw. This adjusting thumb-screw *p* is prevented from being turned out of the side of the ratch-

et-block B' by having its shank provided with an enlargement, 15, which abuts against the end wall of the slot *l*, the remainder of the shank between this enlargement and the outside of the head of the thumb-screw being turned down smooth. (See Fig. 3.) The two opposite sides of each jaw are provided with channels or grooves of semicircular shape in cross-section, so as to fit upon the corresponding surfaces of two long parallel guide-rods, *r r*, which are driven through the ratchet-block B' in such manner that one half of each rod enters the contiguous side wall of the rectangular slot *l*, and the other half of the rod projects beyond said wall and enters the contiguous channel in the jaw. The channels in the sides of the stationary jaw are made slightly smaller or shallower than those in the movable jaw, in order that when the guide-rods are driven in through the ratchet-block they will wedge themselves into the channels of the stationary jaw, and thus securely hold it in place, while, as the guide-rods do not snugly fit the channels of the movable jaw, the latter is left free to be slid thereon when the thumb-screw *p* is turned. The smooth shank of the thumb-screw is first passed through the side of the ratchet-block and the head of the thumb-screw secured by driving a small pin through it, after which the screw is turned into the movable jaw. The two jaws are then held in their proper position in the slot *l*, when the two guide-rods *r r* are driven in through the ratchet-block, wedging and permanently holding

the stationary jaw *m* and loosely fitting the channels of the movable jaw, as desired. Each jaw is provided with two faces at right angles to each other, to accommodate the square head of the working-tool to be grasped between them, the lower portion of the tool extending down through a central circular opening, *s*, in the ratchet B. To enable the tool to be turned in the opposite direction without reversing the ratchet, a second pawl may be used, in which case it is only necessary that the form of the ratchet-teeth and that of the pawls conform to each other.

In the foregoing it is stated that the ratchet is preferably formed in the same piece as the ratchet-block B'; but it is evident that they may be made separately and afterward united securely together.

I claim—

The ratchet-block B', with its ratchet B, slot *l*, and jaws *m n*, the stock or holder A, having handles *c c*, an opening, *b*, for the reception of the ratchet, and one or more pawls to engage therewith, in combination with a plate, C, for keeping the ratchet within the holder, constructed to operate substantially as and for the purpose described.

Witness my hand this 14th day of April, 1883.

HARRY E. WOODS.

In presence of—

N. W. STEARNS,
JAS. W. CHAPMAN.