

(No Model.)

J. E. BRENDLINGER.
RATCHET WRENCH.

No. 478,680.

Patented July 12, 1892.

Fig. 1.

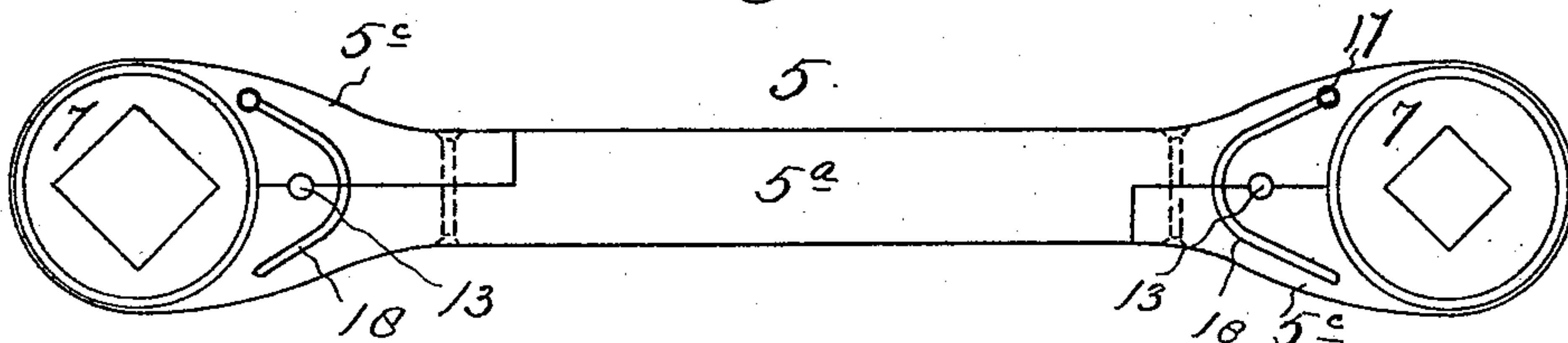


Fig. 3.

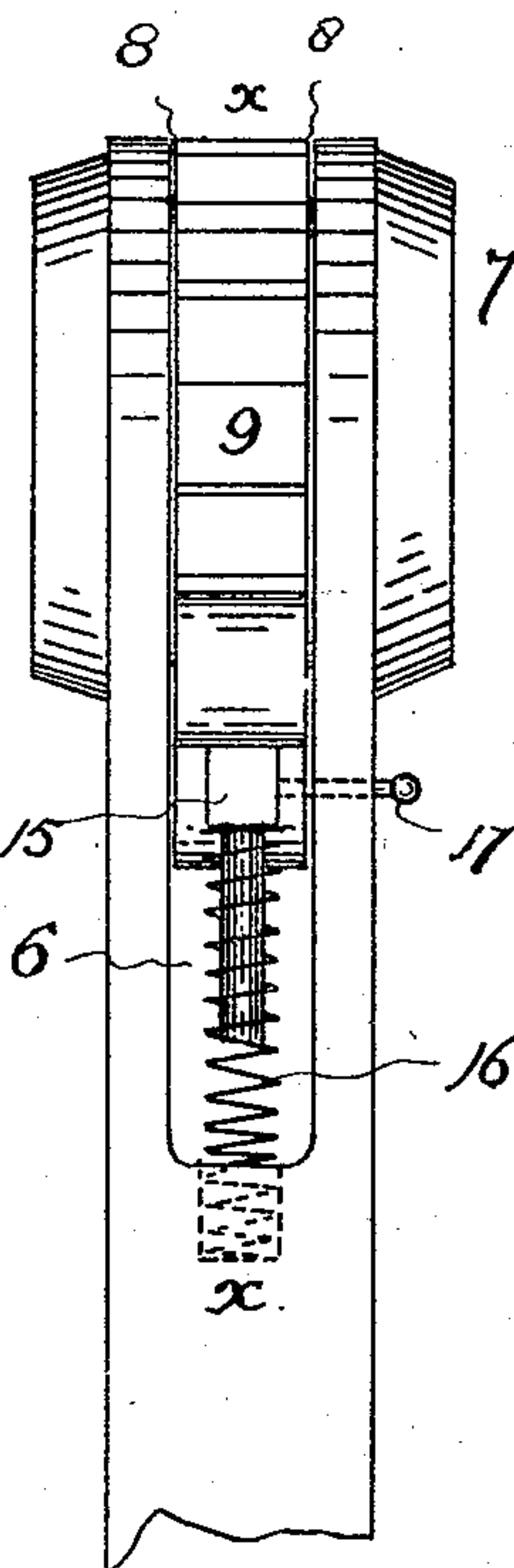
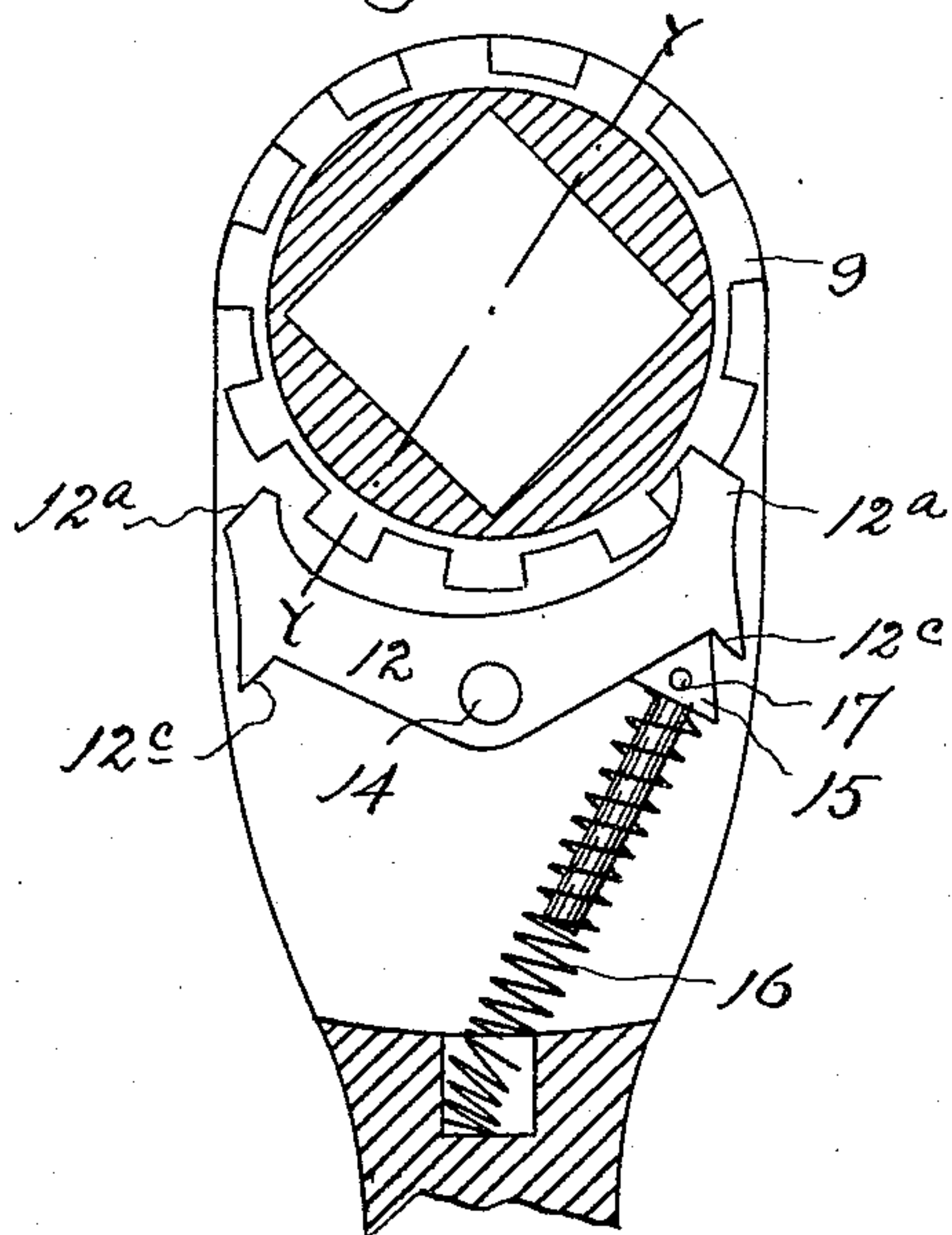
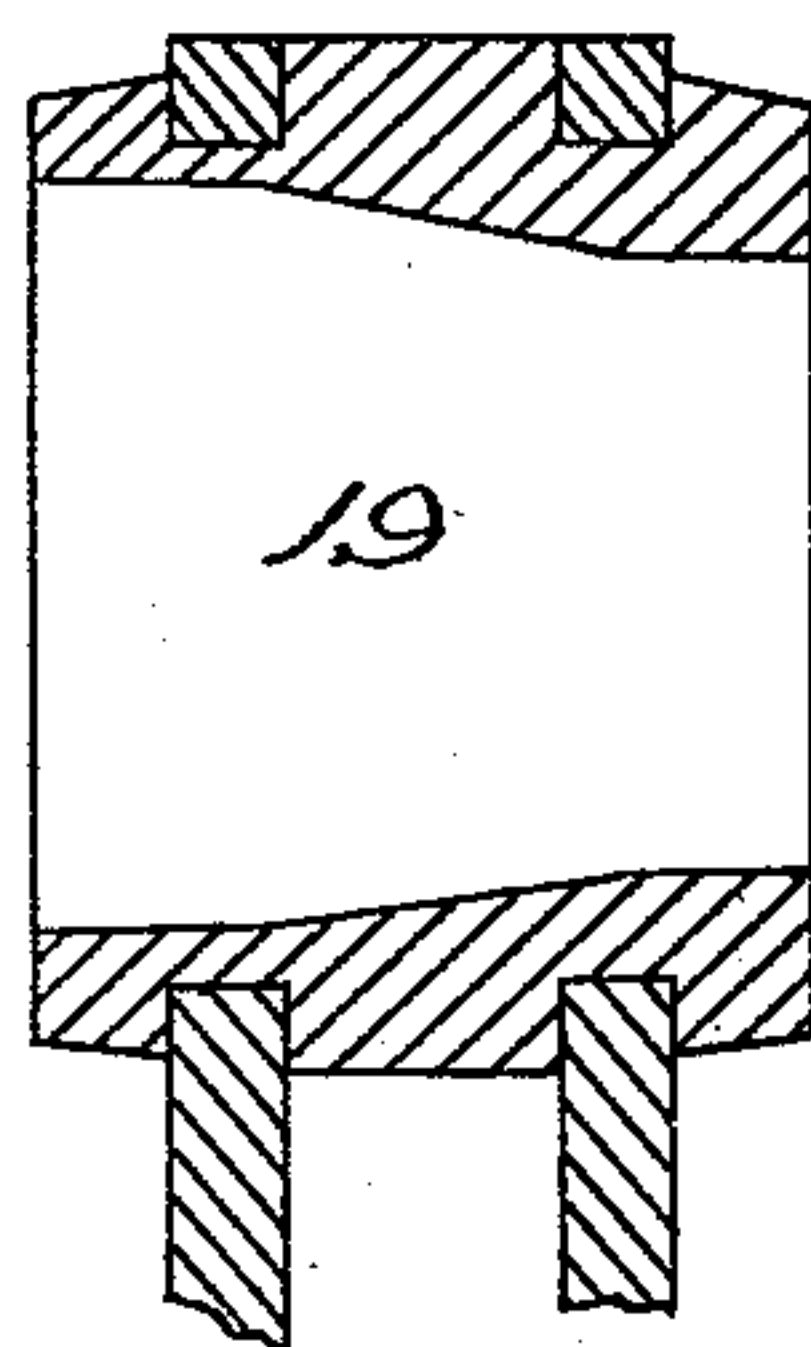


Fig. 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH E. BRENDLINGER, OF DENVER, COLORADO.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 478,680, dated July 12, 1892.

Application filed January 6, 1892. Serial No. 417,217. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. BRENDLINGER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Adjustable Ratchet-Wrenches; 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ratchet-wrenches; and its object is to provide a device of the class stated which shall be of simple and economical construction, reliable, durable, and efficient in use. The device consists of a rotating ratchet-head, in which are formed sockets. The teeth of this head are engaged by a pivoted locking-arm capable of such adjustment that its extremities alternately engage the ratchet-teeth, this arm being so located with reference to the head that when one extremity thereof is in engagement with the teeth of the head the head may be moved in one direction, while it is locked against rotation in the opposite direction, while when the other extremity of the arm engages said teeth the result is exactly the reverse. The pivoted arm is adjusted by the use of a spring-actuated dog or pawl, which may be adjusted so as to engage a shoulder formed at either end of the locking-arm.

The device will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment of the invention.

In the drawings, Figure 1 is a side elevation of my improved wrench. Fig. 2 is an edge view, on an enlarged scale, of the ratchet-head. Fig. 3 is a section taken on the line *x x*, Fig. 1. Fig. 4 is a section taken through the head on the line *y y*, Fig. 3.

Similar reference-characters indicating corresponding parts or elements of the mechanism in the several views, let the numeral 5 designate a suitable handle having its extremities recessed or slotted, as shown at 6, to receive the ratchet-head 7, which, as shown in the drawings, are formed integral and pro-

vided with circumferential grooves 8, one on each side of the ratchet-zone 9. To harmonize with this construction of the head, the handle is formed in three parts—namely, the body portion 5^a and the two sections 5^c, each of which constitutes one-half of the extremity of the handle and engages the grooves of the head on one side. The sections of the handle are secured to the main portion thereof by the bolts or rivets 10. Within each recess 6 of the handle is located the locking-arm 12, supported in position by and pivoted upon a pin or rivet 13, passing through the handle, and a suitable opening 14, formed in the center of the arm. The extremities 12^a of this arm are fashioned to engage the teeth of the ratchet-zone, each extremity being also provided with a shoulder 12^c, forming a stop for the pawl or dog 15, having a shouldered head 15^a, engaged by one extremity of a coil-spring 16, which surrounds the stem 15^c of the pawl, its opposite extremity being located in a central socket formed in the handle at the bottom of recess 6. The spring-actuated pawl may be adjusted or shifted from the engagement of one shoulder 12^c of the arm to the engagement of the other by the use of a pin secured to the head of the pawl and protruding through a curved slot 18 in the handle. This pin is normally held in one extremity of the slot 18. As it is moved from this extremity toward the opposite extremity, the spring is compressed until the center of the slot is reached, when the recoil of the spring carries the pin to the opposite extremity of the slot and the head of the pawl to engagement with the opposite shoulder of the locking-arm, causing the corresponding extremity of the arm to engage the teeth of the ratchet, with the result heretofore stated. The socket 19 of the head is preferably shaped to fit two sizes of nuts, as shown, the wrench being preferably formed with two ratchet-heads. Hence each wrench may be made to fit four different sizes of nuts.

Having thus described my invention, what I claim is—

1. The combination, in a wrench, of an integral head provided with a suitable socket, two circumferential grooves, and a ratchet-zone between these grooves, a sectional recessed handle adapted to fit the head, a pivoted locking-arm located in the recess of the

handle and having its extremities fashioned to engage the teeth of the ratchet-zone and provided with shoulders or stops, one on each side of the pivot, a pawl or dog also located within the recess of the handle and provided with a shouldered head, and a coil-spring surrounding the stem of the pawl and engaging the shouldered head at one extremity, a socket formed in the handle at the bottom of the recess and adapted to receive the opposite extremity of the spring, and suitable means for adjusting the pawl or dog, whereby it is made to engage either shoulder of the locking-arm at will, substantially as described.

2. The combination, in a wrench, of an integral head provided with a suitable socket, two circumferential grooves, and a ratchet-zone between these grooves, a sectional recessed handle adapted to fit the head, a pivoted locking-arm located in the recess of the handle and having its extremities fashioned to engage the teeth of the ratchet-zone and

provided with shoulders or stops, one on each side of the pivot, a pawl or dog also located within the recess of the handle and provided with a shouldered head, and a coil-spring surrounding the stem of the pawl and engaging the shouldered head at one extremity, a socket formed in the handle at the bottom of the recess and adapted to receive the opposite extremity of the spring, and suitable means for adjusting the dog, consisting of a pin made fast to the head of the pawl, and a slot formed in the handle and forming a way for the pin, whereby the pawl is made to engage either shoulder of the locking-arm at will, substantially as described.

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

JOSEPH E. BRENDLINGER.

Witnesses:

WM. MCCONNELL,
G. J. ROLLANDET.