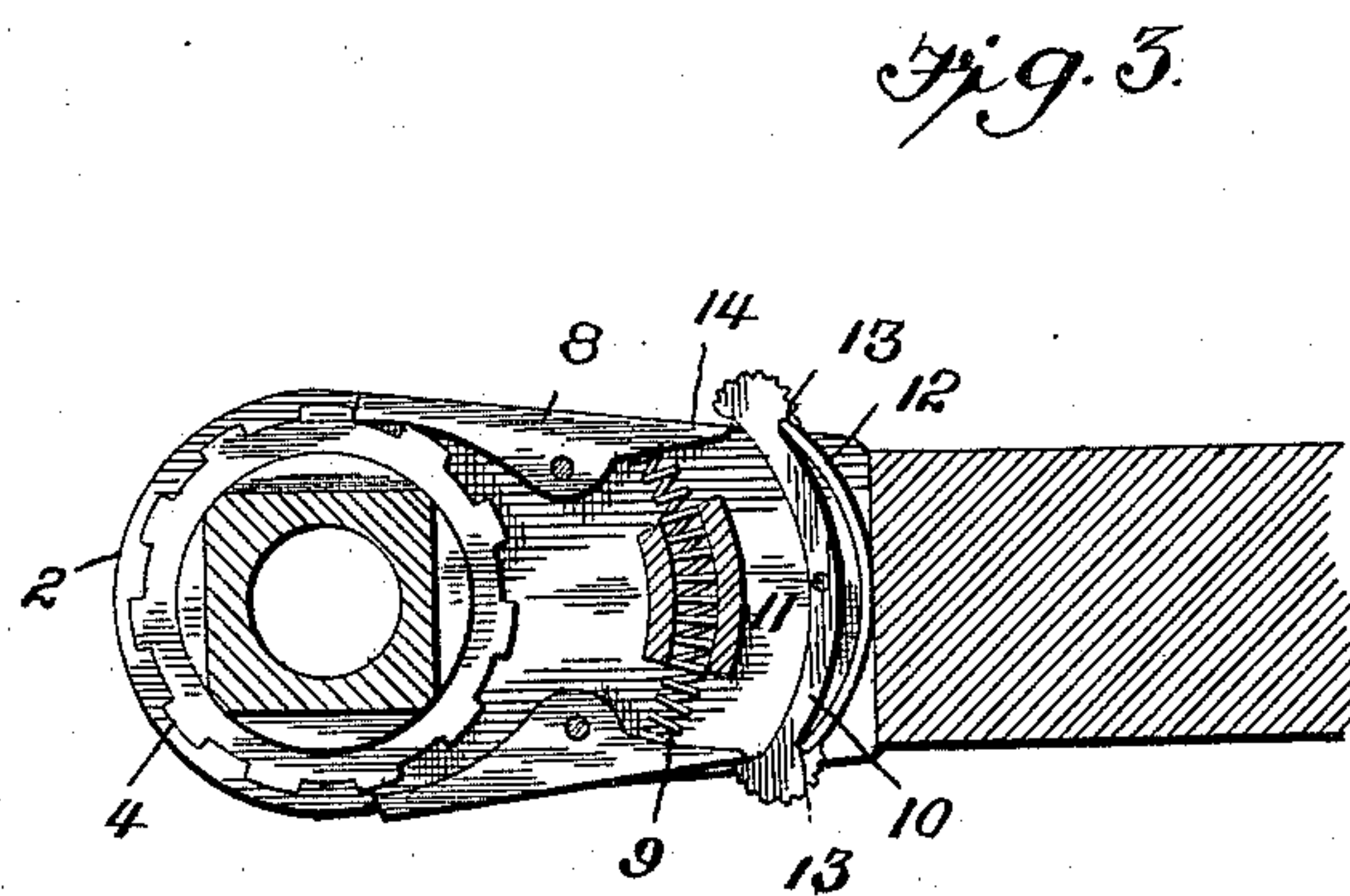
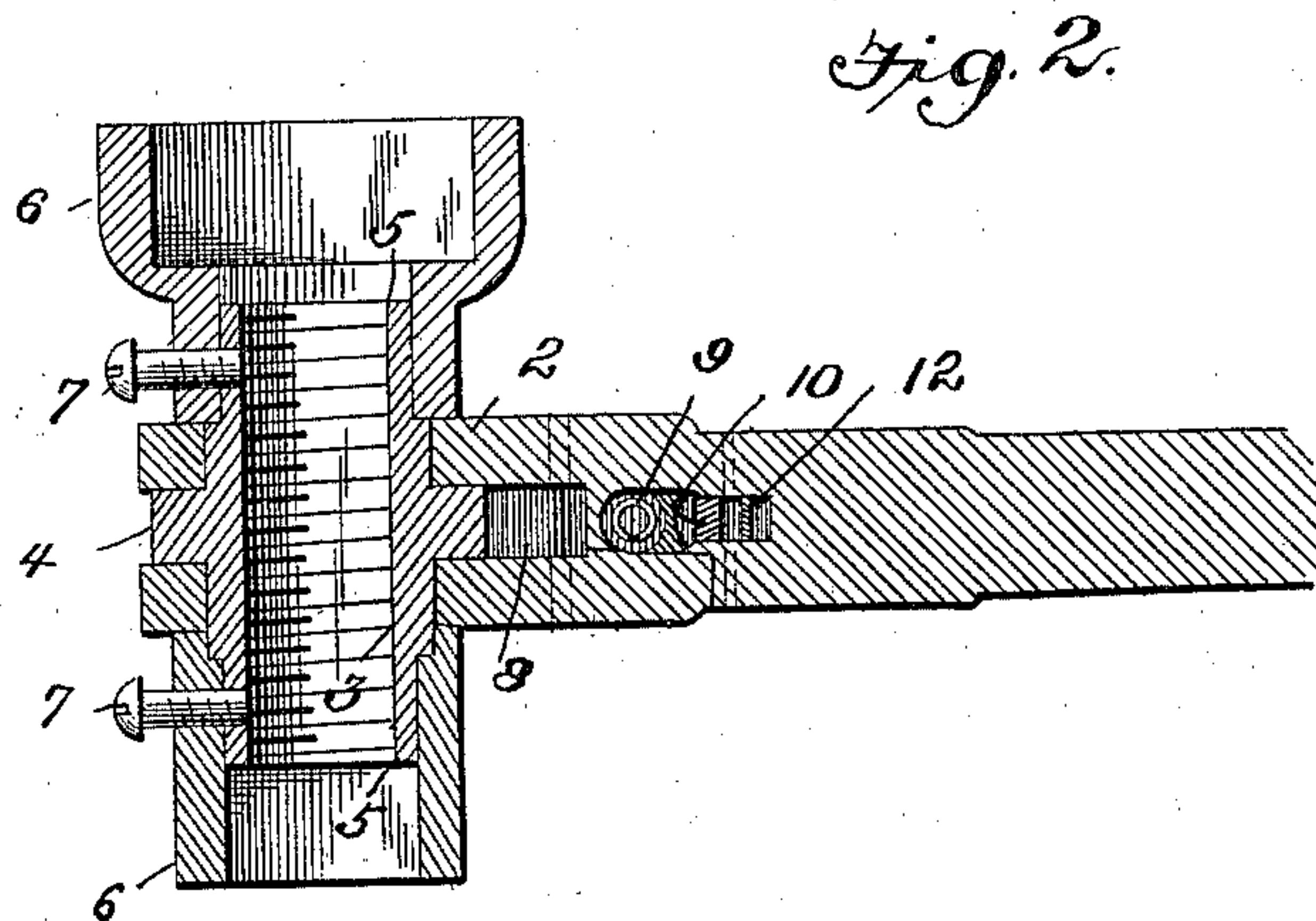
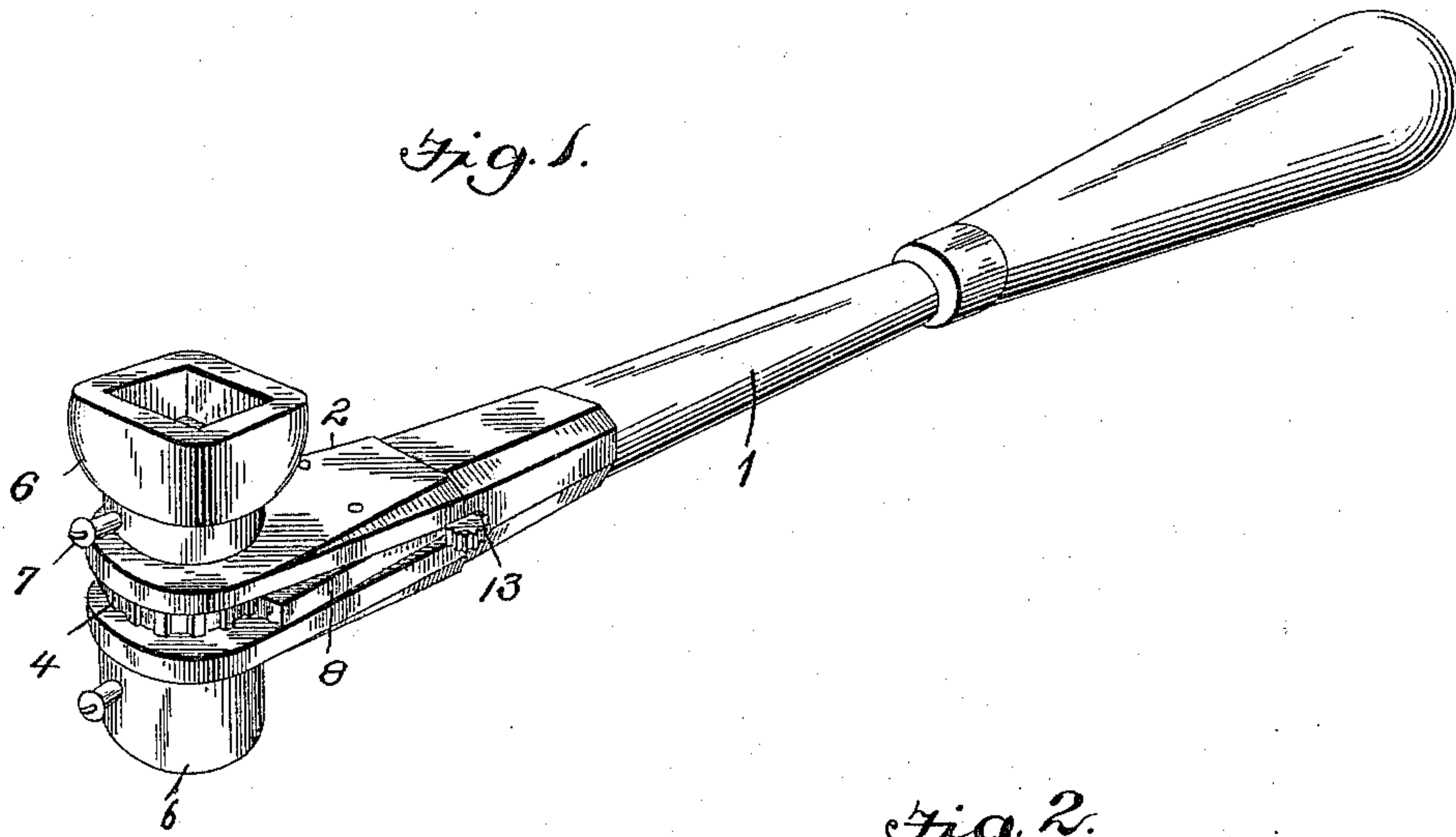


(No Model.)

G. S. UPSHAW.
NUT WRENCH.

No. 533,386.

Patented Jan. 29, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE S. UPSHAW, OF ABILENE, KANSAS.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 533,386, dated January 29, 1895.

Application filed July 20, 1894. Serial No. 518,094. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. UPSHAW, a citizen of the United States, residing at Abilene, in the county of Dickinson and State of Kansas, have invented certain new and useful Improvements in Nut-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 nut-wrenches the object of my invention being to provide an improved nut-wrench, which, while simple in construction and economical in manufacture, shall be capable of adjustment for different sizes of nuts and shall likewise be convenient of manipulation for screwing the nut in either direction in narrow and contracted places where only one side of the wrench can be approached by the hand for the purpose of adjusting the wrench to effect a reversal of its operative movement.

Referring to the drawings, Figure 1 is a perspective view of my improved nut-wrench, and Figs. 2 and 3 are longitudinal sections taken at right angles to each other of the operative portion of the wrench.

1 is the stem of the wrench, upon the end of which are formed suitable bearings 2, in which turns a hollow hub or spindle 3, the central portion of which extends between the bearings 2 and is formed into a ratchet wheel 4, and the terminal portions 5 extending beyond the bearings are squared to receive the squared ends of the wrench heads or dies 6, which, when slipped onto the squared ends are secured in place by set screws 7. This arrangement provides for a number of wrench-heads of different sizes being used, as desired, for different sizes of nuts. The ratchet wheel 4 has its teeth formed with square sides, so that either side can be engaged by the front end of one or the other of two dogs 8, pivoted within the bearing extensions of the wrench stem the rear ends of the dogs being normally pressed outwardly by a spring 9 arranged between said bearing extensions.

10 is a stop pivoted centrally at 11, each end of which projects beyond a side of the

wrench and is formed with a milled or corrugated outer surface for contact with the finger of the operator when he desires to reverse the operative movement. A bow spring 12, held between notches 13 of the stop, serves to hold the stop in the position in which it is placed by the operator. As has been already stated the stop 10 is pivoted to have a slight movement of vibration, and in consequence, one or the other of the ends of the stop will engage the tail 14 of one of the dogs and will thus throw said dog out of engagement with the ratchet wheel and permit said ratchet wheel to move inwardly past said dog, the wrench head, which is secured upon said ratchet wheel, being thus given a corresponding freedom of movement in the same direction. The ratchet wheel will also be free to move in this direction past the opposite dog, although it will be in contact therewith, by reason of the spring 9 which presses the dog against the ratchet wheel, the stop 10 having been moved out of engagement with the tail 14 of said dog; but the ratchet wheel will be held against movement in the opposite direction by the engagement of the nose of said dog with one of the teeth of the wheel. Thus each vibration of the stem of the wrench in one direction will carry with it the ratchet wheel and the wrench head and will turn the nut through a corresponding angle, while upon the reverse movement the ratchet wheel will be held by neither dog, and the wrench can be moved back to the commencement of its operative stroke, the ratchet wheel remaining, meantime, stationary upon the nut.

When it is desired to reverse the direction of operative movement, the operator moves the stop 10 through the necessary small angle to disengage one end of the stop from its corresponding dog and to engage the other end with the other dog to throw said dog out of engagement with the ratchet wheel, and it is here that the peculiar advantage of my invention is to be remarked, for by my arrangement such reversal can be effected from either side of the wrench, or at either end of the stop 10. To push one end of the stop forward will be equivalent to moving the opposite end backward, and either of these very simple operations will be sufficient to throw one dog out of engagement with

the ratchet wheel and the other dog into engagement therewith, reversing the operative movement. By placing this reversing device at the sides instead of at the top or bottom of the wrench, and by arranging so that it can be operated from either side at pleasure, I render it impossible for the reversing device to be inaccessible, however restricted is the space in which the wrench is being operated, for there will always be the space in which the wrench has been moved in its last vibratory stroke through which it will be possible to gain access with the hand to the reversing device.

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

1. In a nut-wrench, the combination, with suitable bearings, of a ratchet wheel rotatable therein, spring-actuated dogs adapted to engage said ratchet wheel to oppose opposite movements thereof, a stop, pivoted within the

wrench stem and extending through both sides thereof, which, upon disengagement from one of said dogs, engages the other to withdraw it from said ratchet wheel, and a spring for holding the stop to its work, substantially as described.

2. In a nut-wrench, the combination, with suitable bearings, of a ratchet wheel rotatable therein, dogs alternately engaging said ratchet wheel to oppose opposite movements thereof, a stop arranged transversely within the wrench stem and projecting from each side thereof, and movably engaging one or the other of the dogs to withdraw it from the ratchet wheel, and a spring for holding the stop to its work substantially as described.

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

GEORGE S. UPSHAW.

Witnesses:

PAUL HURD,
J. W. MILLER.