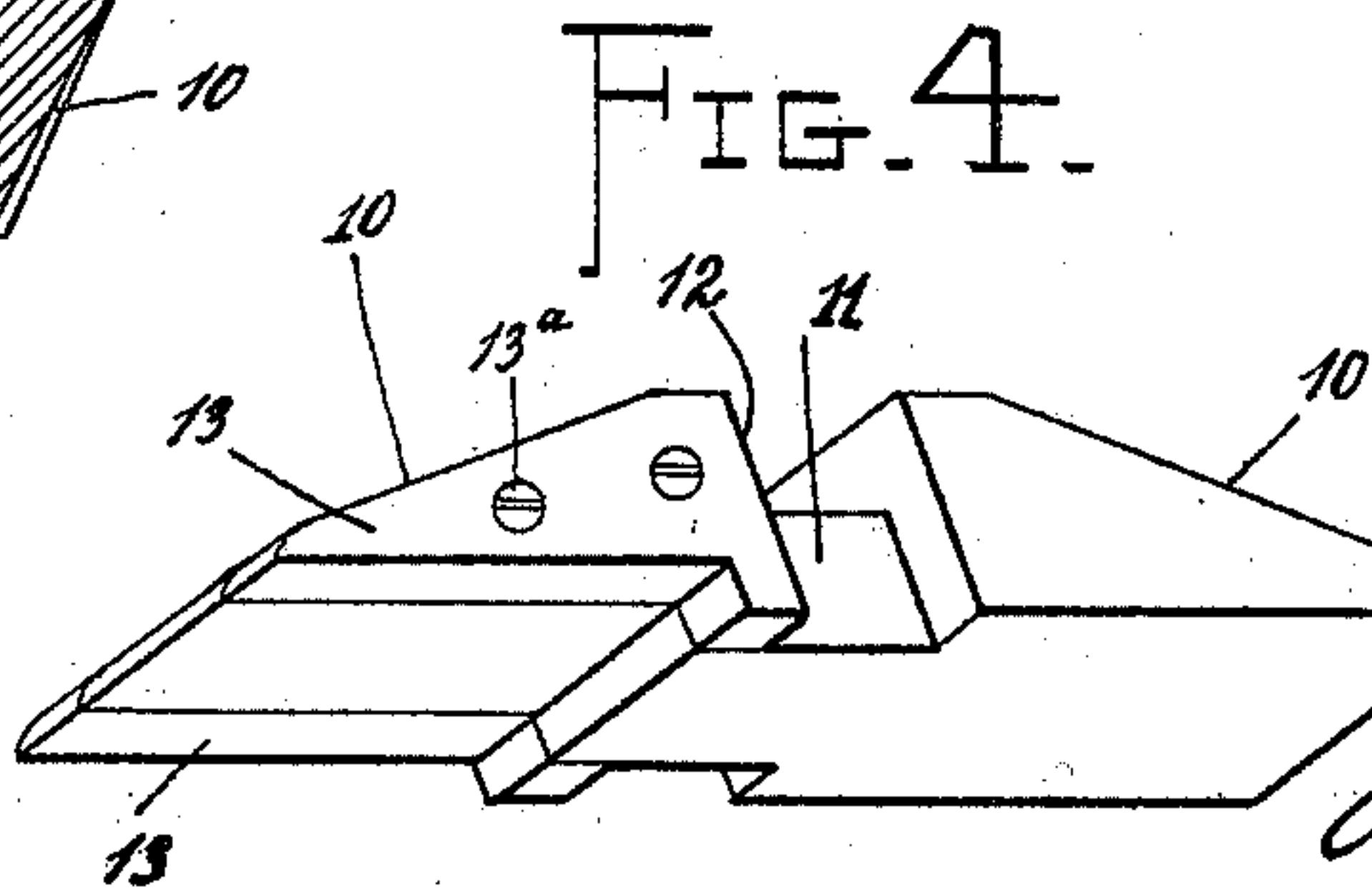
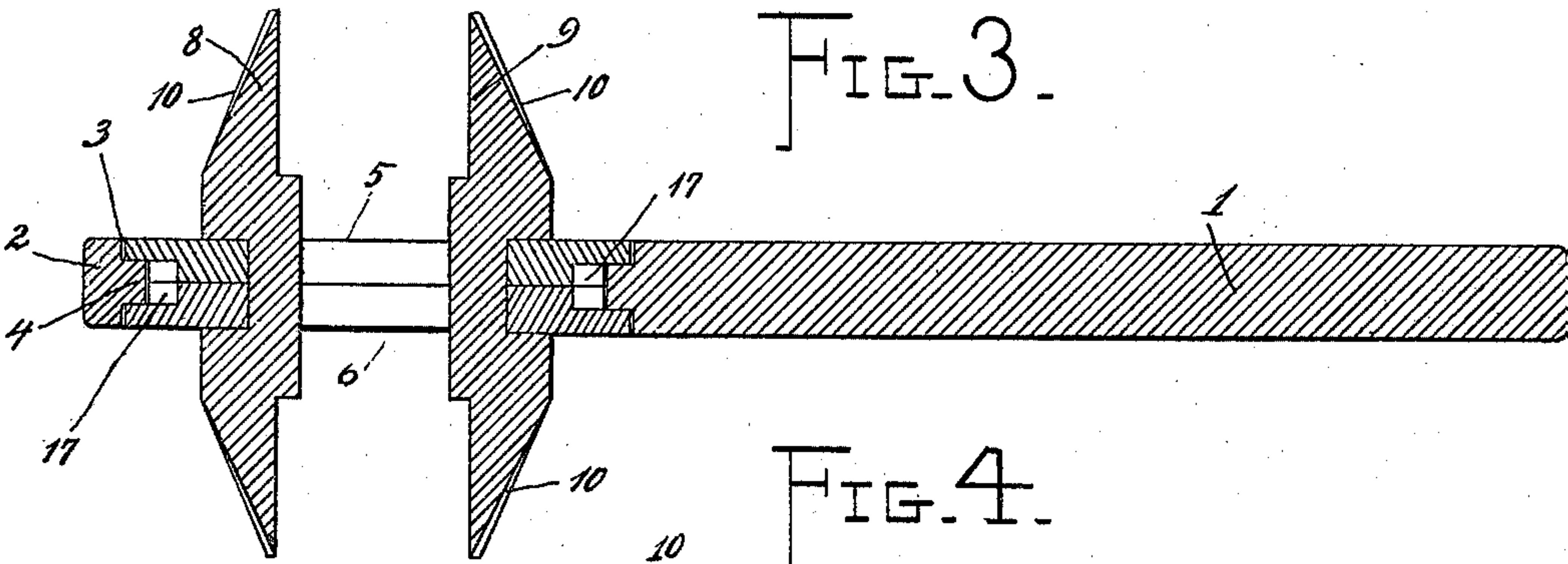
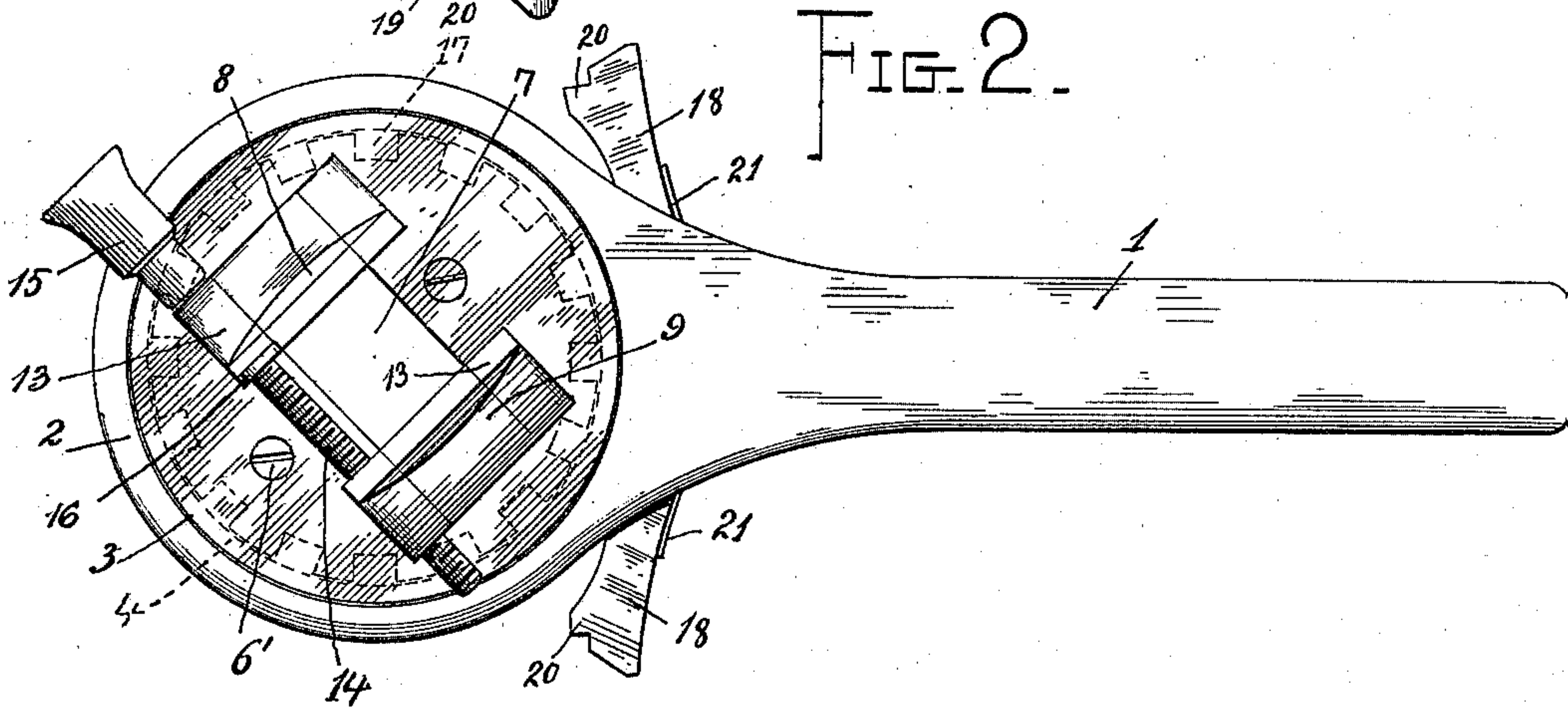
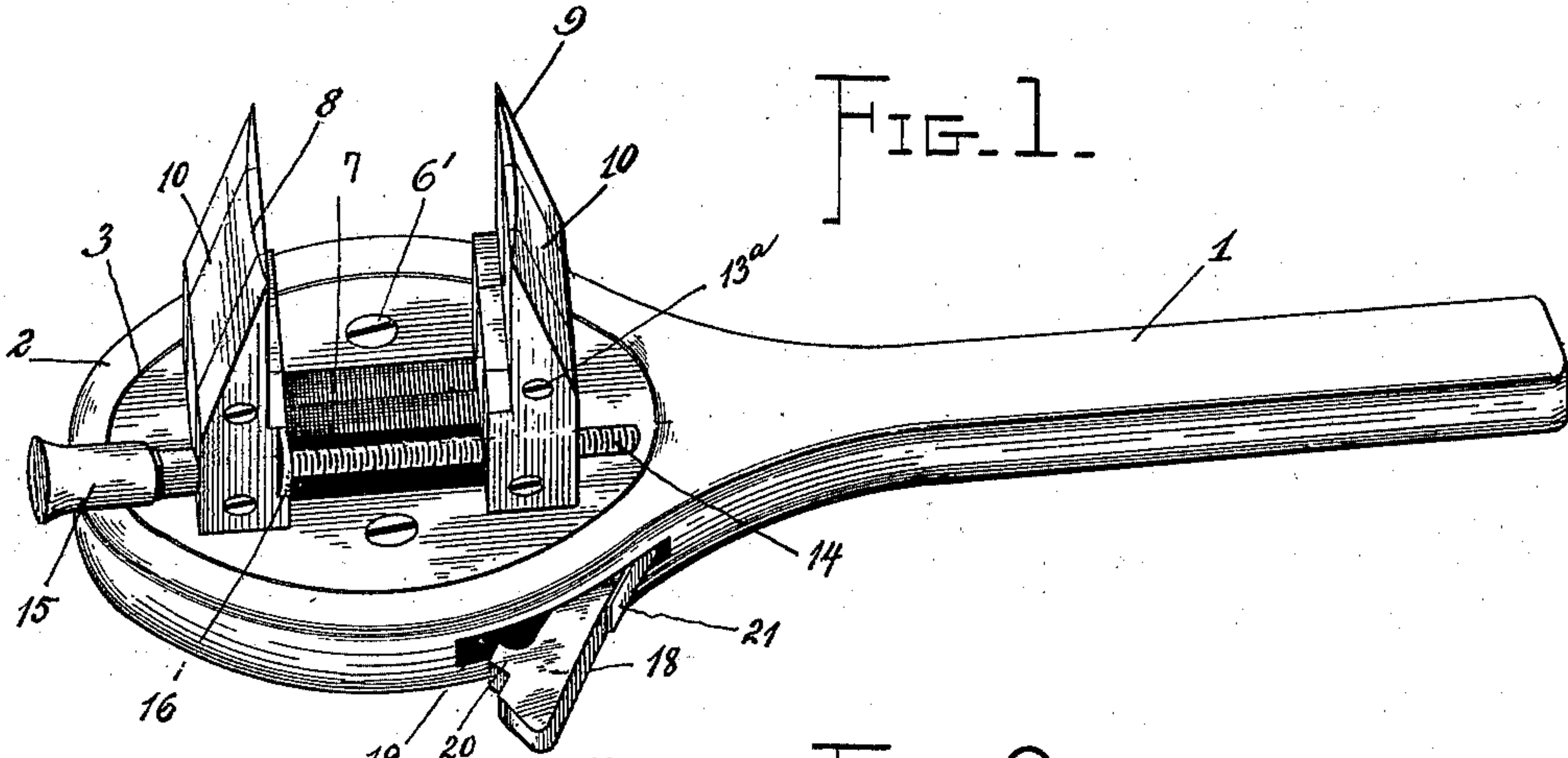


(No Model.)

I. A. CUNNINGHAM.
WRENCH.

No. 598,304.

Patented Feb. 1, 1898.



WITNESSES

John F. Souffernel
A.M. Doughton

INVENTOR
Isaac A. CUNNINGHAM,

John H. Ashburn
Attorney

UNITED STATES PATENT OFFICE.

ISAAC A. CUNNINGHAM, OF ANTRIM, OHIO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 598,304, dated February 1, 1898.

Application filed February 25, 1897. Serial No. 624,925. (No model.)

To all whom it may concern:

Be it known that I, ISAAC A. CUNNINGHAM, a citizen of the United States, residing at Antrim, in the county of Guernsey and State of Ohio, have invented certain new and useful Improvements in Wrenches; and I do hereby 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.

My invention relates to certain new and useful improvements in wrenches, the object being to provide a simple and cheap construction of wrench combining certain improvements, as will be hereinafter more fully described.

In the accompanying drawings, Figure 1 shows a perspective view of a wrench constructed in accordance with my invention; Fig. 2, a plan view of the same, showing the jaws and guiding-plates shifted. Fig. 3 is a cross-section of the wrench, the jaws being arranged as shown in Fig. 1. Fig. 4 is a detail perspective view of one of the wrench-jaws.

Like numerals designate like parts throughout the several views.

Referring to the drawings, the numeral 1 designates the handle of the wrench, which terminates in a nearly circular enlarged head 2, provided with a circular opening 3 there-through and formed with a central flange 4, extending entirely around the said opening. Two plates 5 6 fit in the said circular opening and abut against opposite sides of the said flange, and these plates are secured together by screws 6' or any other suitable fastening device to maintain the same in their proper relation. These two plates are provided at the center thereof with a guiding-opening 7, the said two openings being in alinement. This construction and arrangement of the plates relative to the said circular head of the wrench enables the plates to be shifted around in order that the slot thereof may be set at an angle to the handle portion 1, for a purpose hereinafter described.

The wrench has two clamping-jaws 8 and 9, each formed with top and bottom wedge-shaped clamping-faces or head portions 10 and a reduced connecting portion 11. This reduced portion passes through the said open-

ing 7, and the broad base portions of the clamping heads or faces thereof constitute shoulders 12, which fit over upon the shifting plates 5 and 6, and thereby prevent the jaws from becoming disconnected or dropping out of the slot. In order to construct the clamping-jaws so that they may be inserted through the said guiding-opening, I have made the central portion of one side of the jaw-block a continuation of the reduced center and provided removable side blocks 13 to fit over upon the shifting plates, as shown in Fig. 4, said side pieces being secured to the jaw-block by screws 13^a.

The jaw 8 is fixed or rigidly secured to the two shifting plates at one side of the guiding-slot 7 by any suitable fastening means, while the other jaw is arranged to slide in the said slot to and from the fixed jaw. A screw-shaft 14 passes through the two jaws, adjacent one end thereof, and is provided with a handle 15, whereby it may be turned. The threaded portion of this screw-shaft passes through a threaded opening in the sliding jaw 9 and is adapted to move the said jaw to and from the fixed jaw. The shaft is provided at the extremity of its screw-threads with a stop-collar 16, which abuts against the jaw 8 and prevents the shaft from being pulled through the opening therein and insures that the shaft must be revolved to adjust the sliding jaw.

The two shifting plates 5 6 are provided around their rims with a series of notches 17, with which pivoted catches 18 on opposite sides of the head 2 of the wrench are adapted to engage. Each catch 18 is pivoted in a slot 19 and provided with a locking projection 20 to fit in said notches. A spring 21 bears against the near end of the pivoted catch and tends to hold the same in locked position. By this construction these two shifting plates 5 6 and the jaws 8 9 of the wrench may be turned or shifted so as to bring the jaws to an angular position with reference to the handle portion 1 of the wrench, and this is greatly advantageous in cases where the jaws are to be engaged with a nut or other device in almost inaccessible places where the handle would be in the way and interfere with the operation of the device. By this construction the handle may be set at an angle to the

jaws and thus be out of the way of any obstructions which would prevent the turning of the wrench. The pivoted catches 18 hold the two shifting plates and the jaws in any position to which they have been set.

5 My invention provides a simple and cheap construction of jaw which combines certain advantages not found in wrenches of ordinary construction, as has been hereinbefore pointed out.

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

15 In a wrench, the combination of a handle having an enlarged head formed with a circular opening and a guide-flange extending around said opening, two shifting plates disposed on opposite sides of said flange and provided with a guiding-slot and with notches
20 around the rim thereof, two clamping-jaws in said slot each formed at one end with a wedge-

shaped clamping face or head and a reduced connecting portion extending through said circular opening, removable side blocks secured to the opposite ends of the jaws, the removal of which will enable said jaws to be inserted into and removed from the slot, a screw-shaft projecting through a smooth opening in one jaw and operating in a threaded opening in the other jaw to adjust the latter, and spring-actuated catches pivoted on the handle and adapted to engage the said notches on the plate-rims and hold said plates immovable, substantially as described.

30 In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ISAAC A. CUNNINGHAM.

Witnesses:

G. A. ALBAUGH,
G. W. MORRISON.