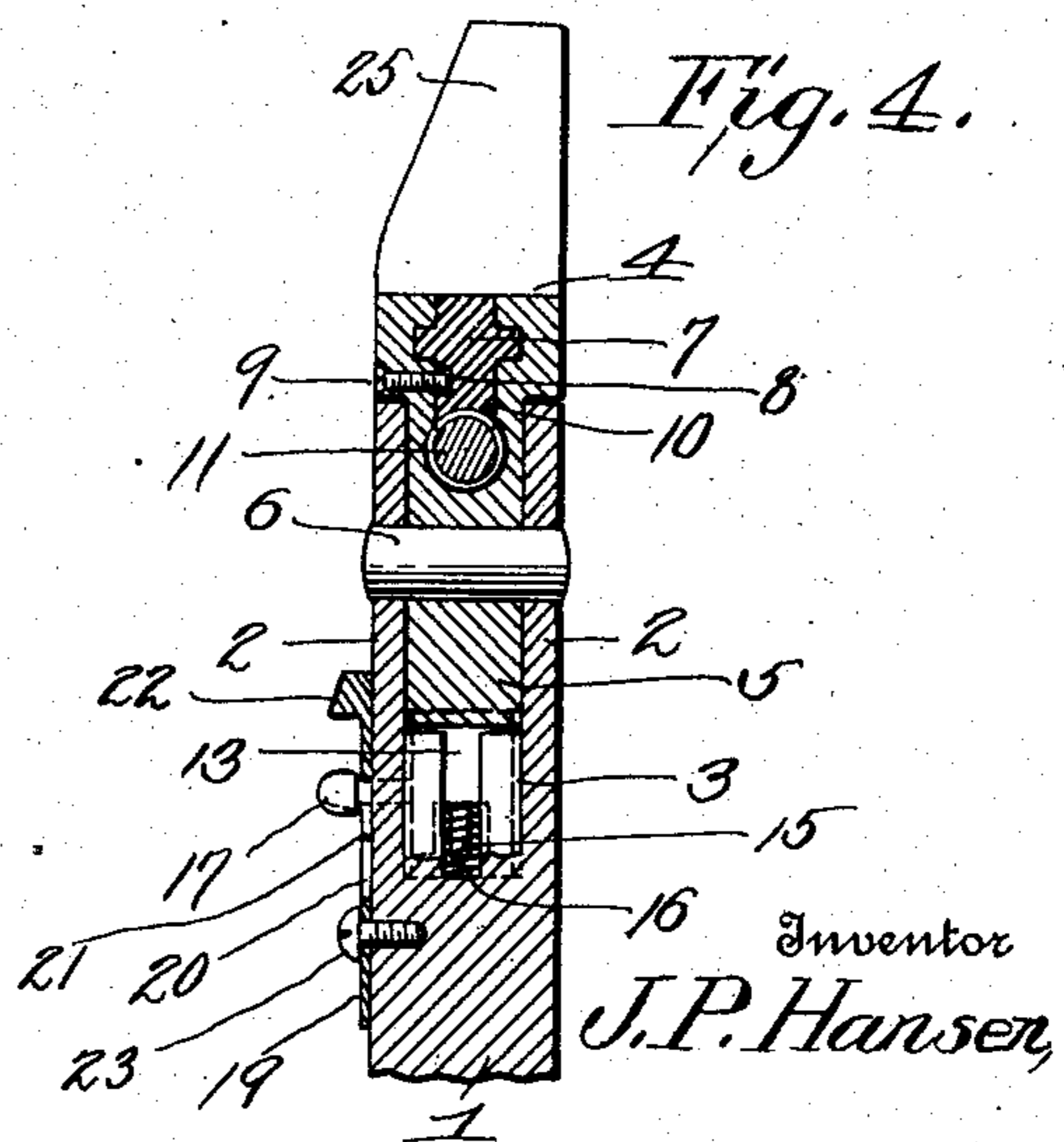
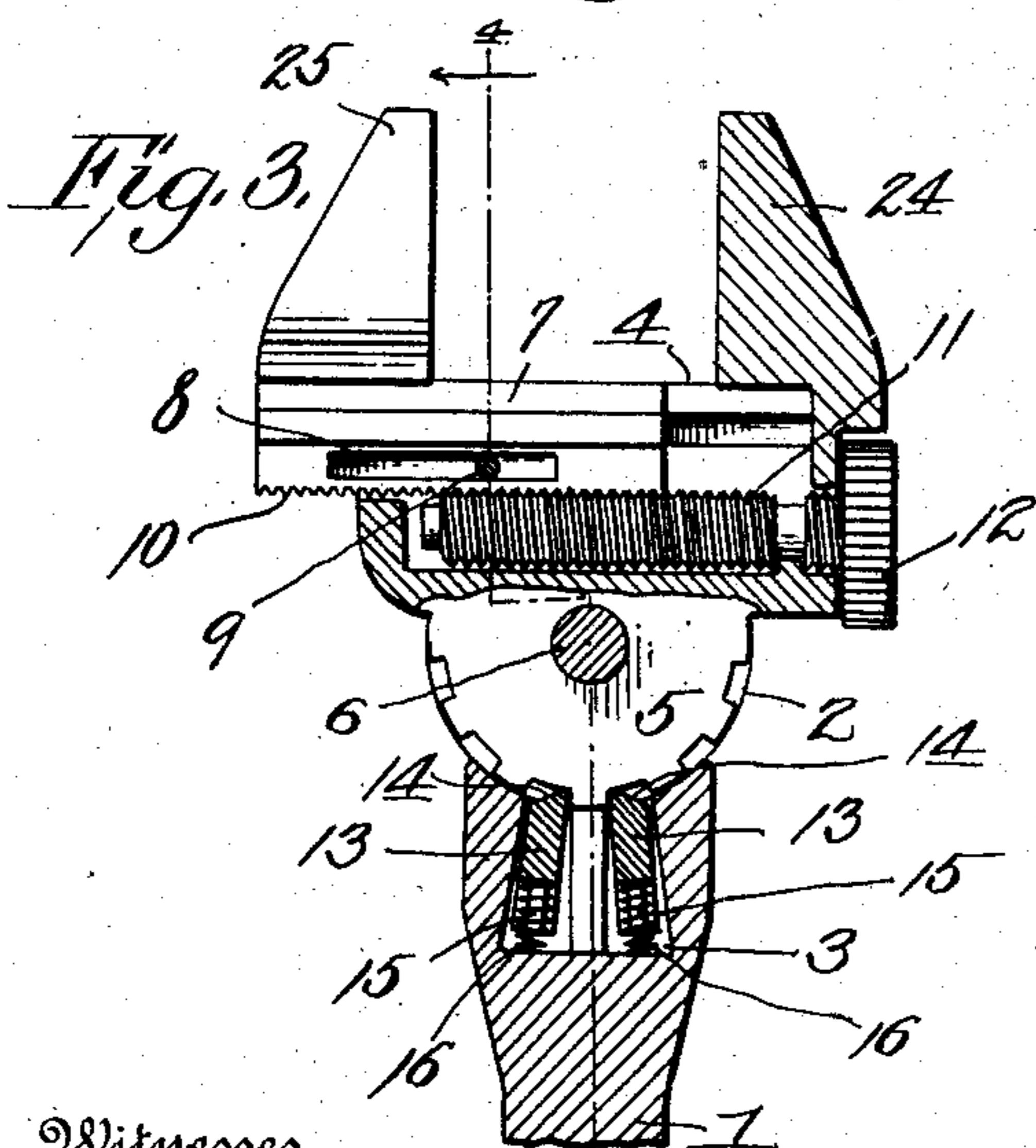
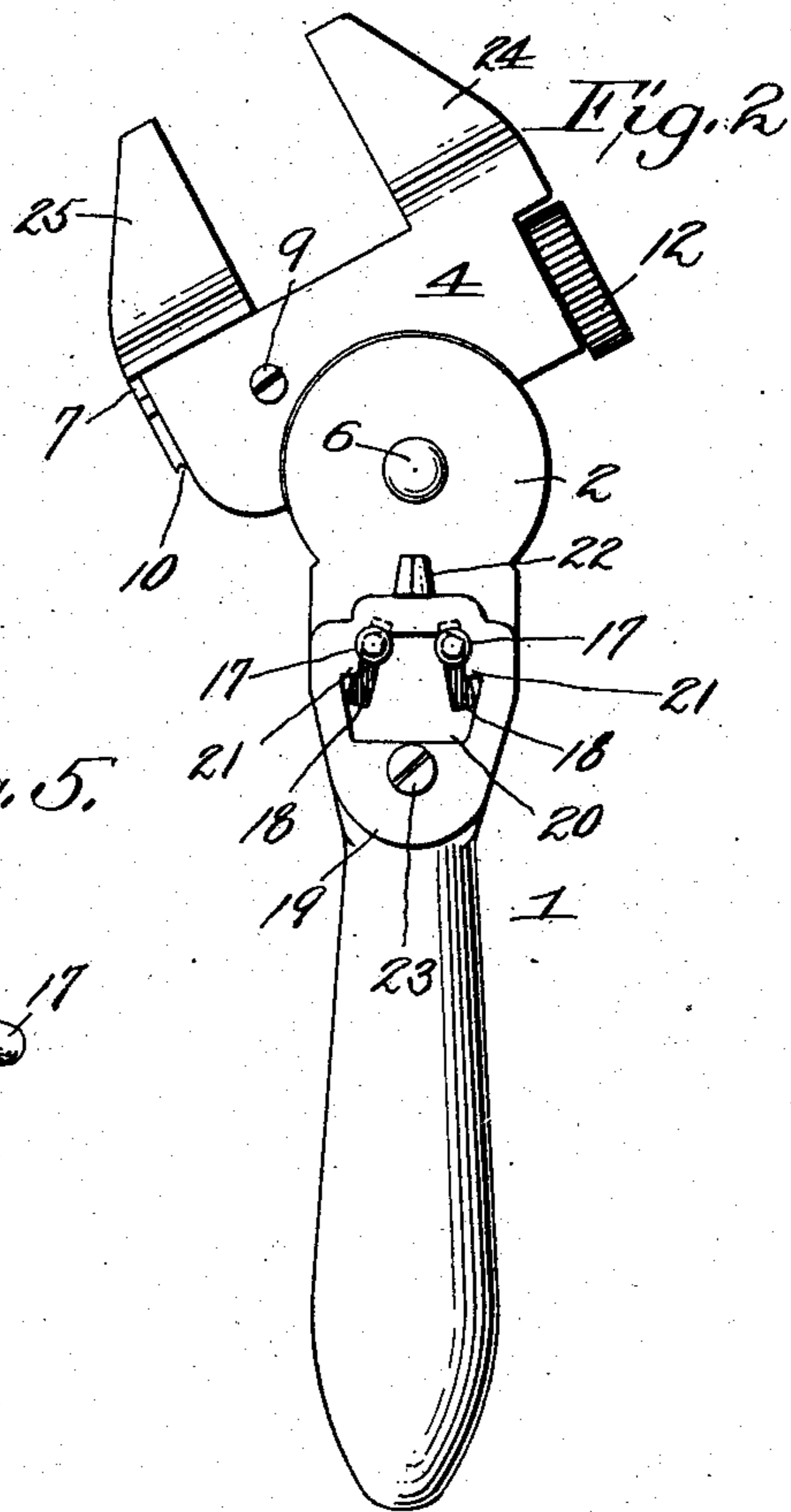
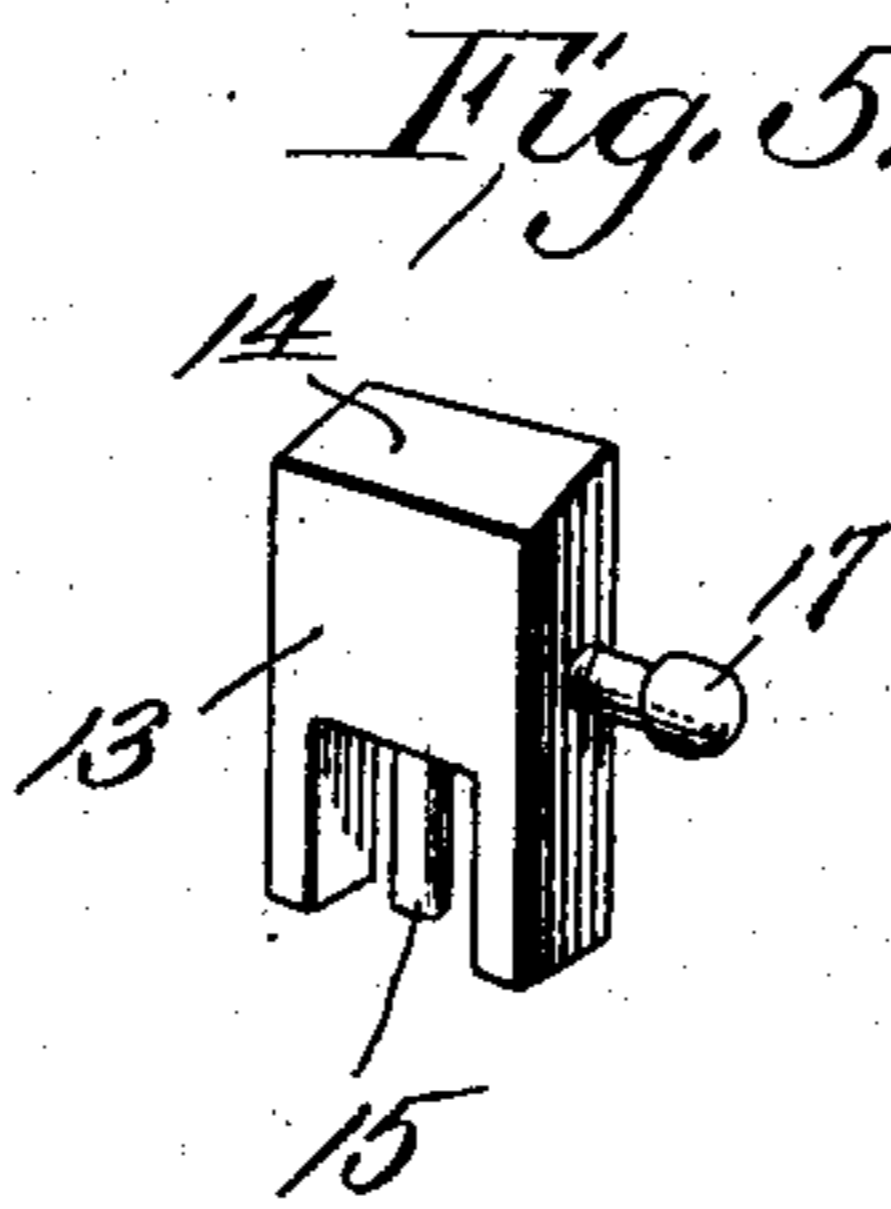
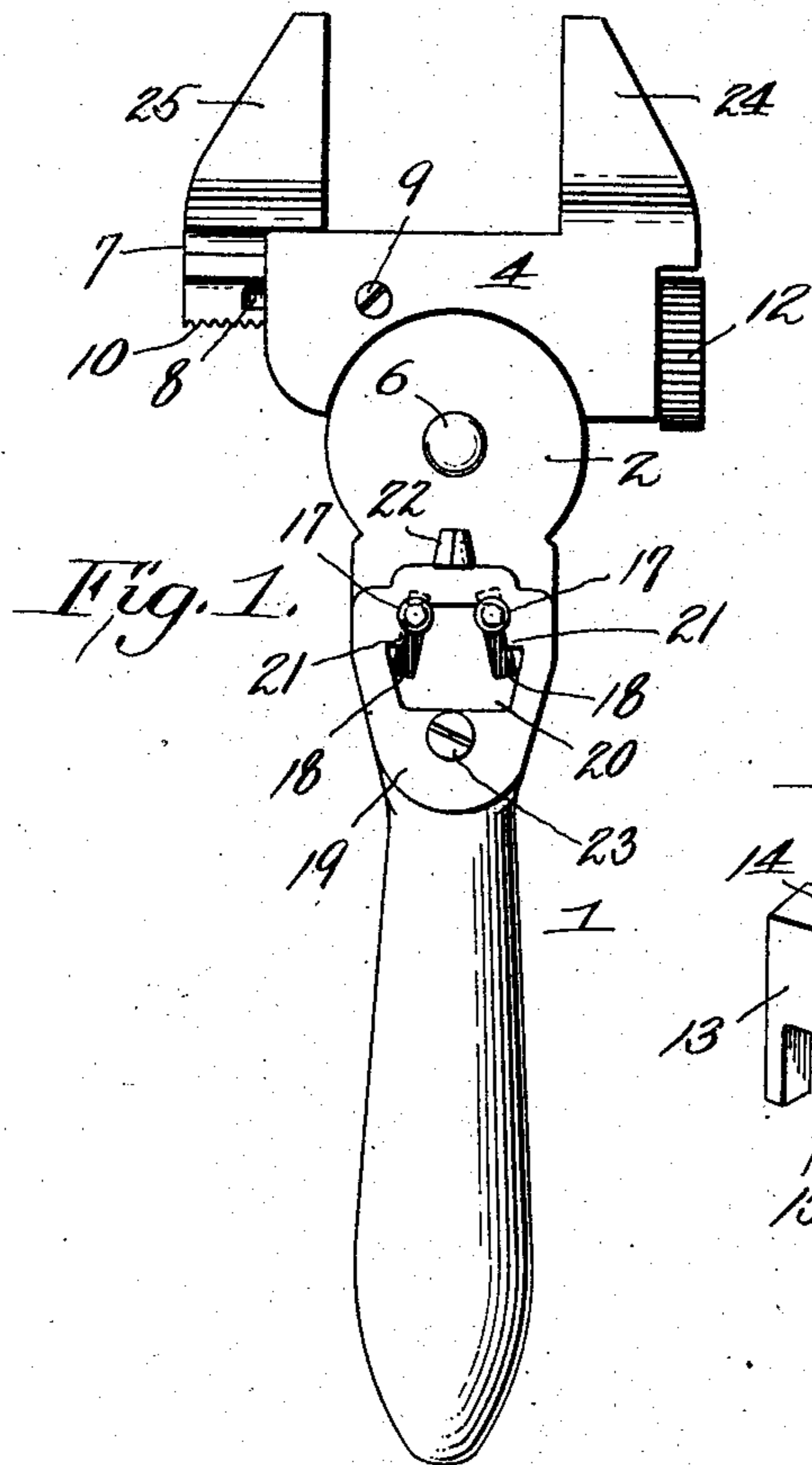


J. P. HANSEN.
 RATCHET WRENCH.
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973,779.

Patented Oct. 25, 1910.



Witnesses

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JOHN P. HANSEN, OF SURING, WISCONSIN.

RATCHET-WRENCH.

973,779.

Specification of Letters Patent.

Patented Oct. 25, 1910.

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To all whom it may concern:

Be it known that I, JOHN P. HANSEN, a citizen of the United States, residing at Suring, in the county of Oconto and State of Wisconsin, have invented a new and useful Improvement in Ratchet-Wrenches, of which the following is a specification.

This invention relates to a ratchet wrench provided with adjustable jaws, and the object of the invention is to enable the operator to use a wrench in a corner, or in a place where the position of a nut is such that it cannot be held and turned by the ordinary straight, rigid-handle wrench.

The invention consists in the novel features of construction hereinafter set forth, pointed out in the claim and shown in the accompanying drawings, in which:

Figure 1 is a plan view showing the jaw head in alinement with the handle, and the jaws in open position. Fig. 2 is a similar view showing the head turned at an angle to the handle and the jaws closer together. Fig. 3 is a sectional plan view illustrating the interior mechanism of the head and its connection with the handle. Fig. 4 is a section on the line 4—4 of Fig. 3, and Fig. 5 is a detail perspective view of a pawl.

In constructing the wrench, I employ a handle 1 which at its forward end is provided with two circular ears 2. The said forward end is also recessed as shown at 3. A head 4 is provided with a semi-circular ratchet portion 5 which fits between the ears 2 and which turns upon a pivot pin 6. The head 4 is longitudinally recessed and in said recess slides a plate 7 longitudinally slotted as shown at 8, and a screw 9 which passes through a side of the head extends into said recess and limits sliding movement of the said plate. As shown in Fig. 4 I prefer to make this plate cross-shaped in cross section. The rear edge of the plate is recessed and threaded as shown at 10 to engage a threaded shaft 11 journaled within the head and operable at one end of the head by means of a milled head 12.

Arranged in the recess 3 are two pawl blocks 13 having at their forward ends oppositely beveled faces 14 adapted for engagement with the ratchet 5, and each of said blocks has its rear end cut out and in said cut-out portion extends a pin 15, carried by the block, and a spring 16 is fitted around each pin, and bears upon the inner end of the cut-out portion of the block at one end,

and upon the inner end of the recess 3 at the other end. Each block also carries upon its upper side an operating pin 17 which works through a slot 18 formed in the face of the handle, the slots for the two pins converging toward the ratchet. This portion of the handle is provided with a metal plate 19 which is centrally cut out as shown at 20, the pin 17 extending into said cut-out portion. The plate is provided with two inwardly extending shoulders 21, one for each pin 17. The plate 19 is pivoted adjacent its rear end upon a screw or other pivot pin 23, and at its forward end is provided with a thumb piece 22 formed by transversely cutting the front edge of the plate, and bending the part so cut outwardly. This forms a sleeve at the forward end of the plate against which the thumb can be pressed in order to swing the plate upon its pivotal point in order to engage one of the pins with one of the shoulders 21. It will be understood that when the plate is swung to one side or the other one pin will be locked in its rearmost position, thus holding one of the pawl blocks out of engagement with the ratchet while the other pin will be released and the pawl block by which it is carried will be forced by its spring 16 into engagement with the ratchet. By throwing the metal plate into a central or intermediate position both pawls are permitted to engage the ratchet as shown in Fig. 3. The head 4 carries at one end a fixed jaw 24 and the sliding plate 7 carries at one end a movable jaw 25.

By means of the milled head 12 the plate 7 can be adjusted in order to properly space the jaw 25 from the jaw 24, and by disengaging the pawls the handle can be swung at the desired angle to the head, and can then be locked so as to make the same rigid with the head. By means of the metal plate one pawl can be held out of engagement with the ratchet and the other pawl permitted to engage the ratchet, thus allowing the handle to swing upon the head of the wrench when moved in one direction, but locking it to said head when the movement of the handle is in the opposite direction, and as the pawls are oppositely beveled they may be adjusted so that the handle will lock with the head when swung in any desired direction.

What I claim is:

In a ratchet wrench a head, a fixed jaw carried thereby, a slidable jaw carried by the head, means for moving the slidable jaw,

a ratchet portion carried by the head, a handle pivotally connected to said ratchet portion, said handle being recessed, pawls movable in the recess, springs for holding said
5 pawls in engagement with the ratchet, operating pins carried by the pawls, the handle being slotted and the pins projecting through said slots, and a pivoted plate carried by the handle, said plate being centrally

cut out, the pins moving in said central cut- 10
out portion, and said plate being provided with inwardly extending shoulders adapted for engagement with said pins, as and for the purpose set forth.

JOHN P. HANSEN.

Witnesses:

GEO. GISCH,
HERMAN GIESE.

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