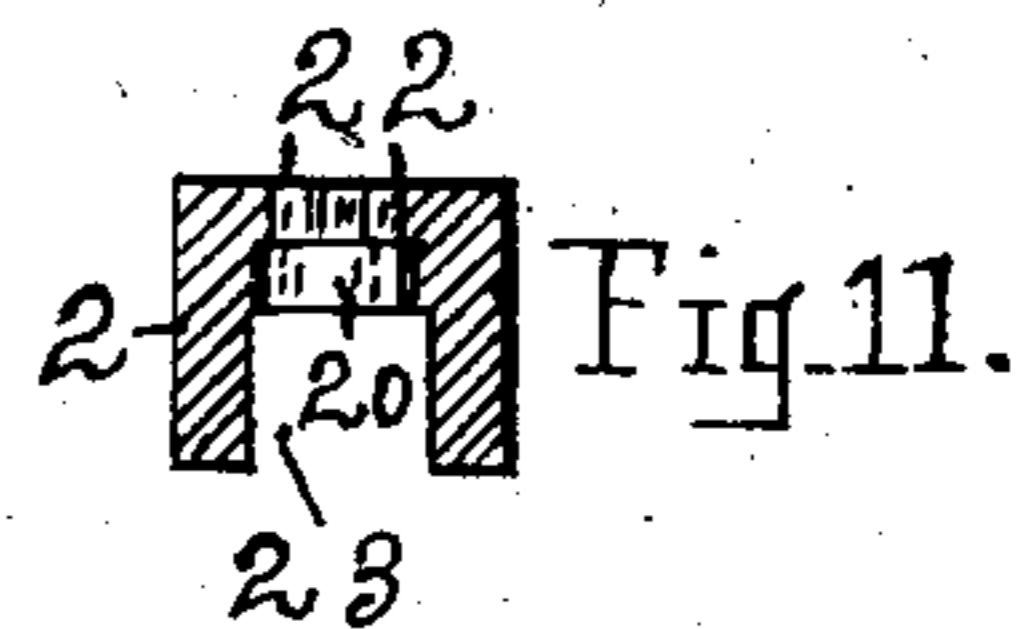
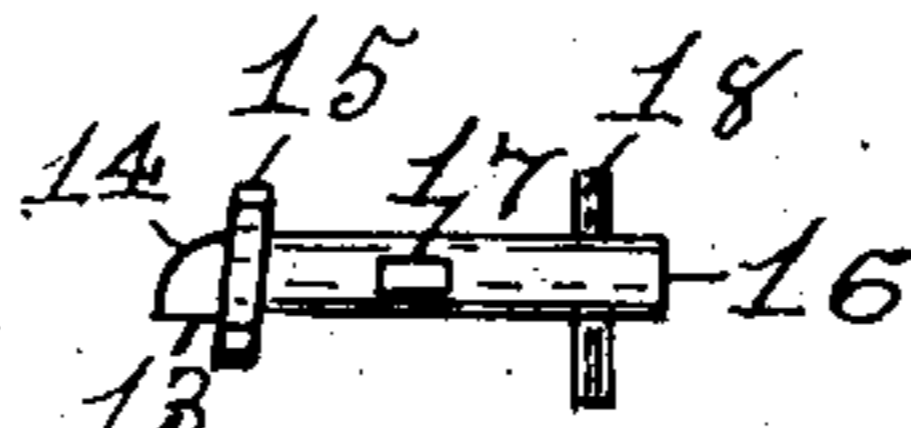
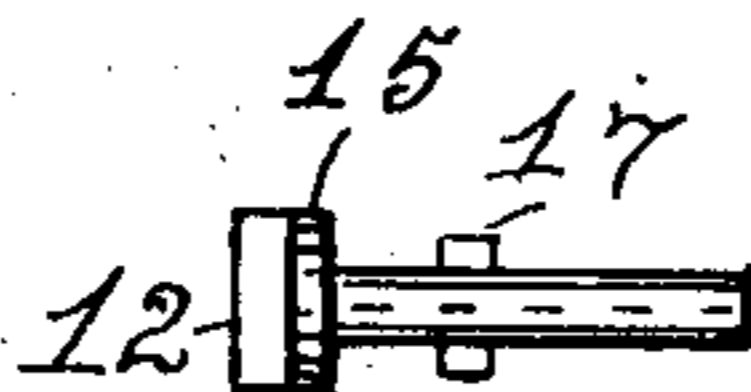
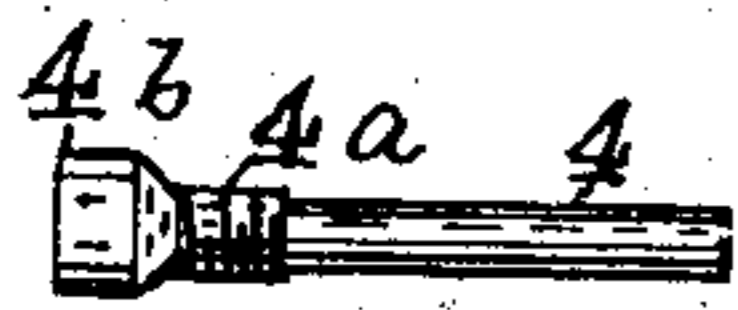
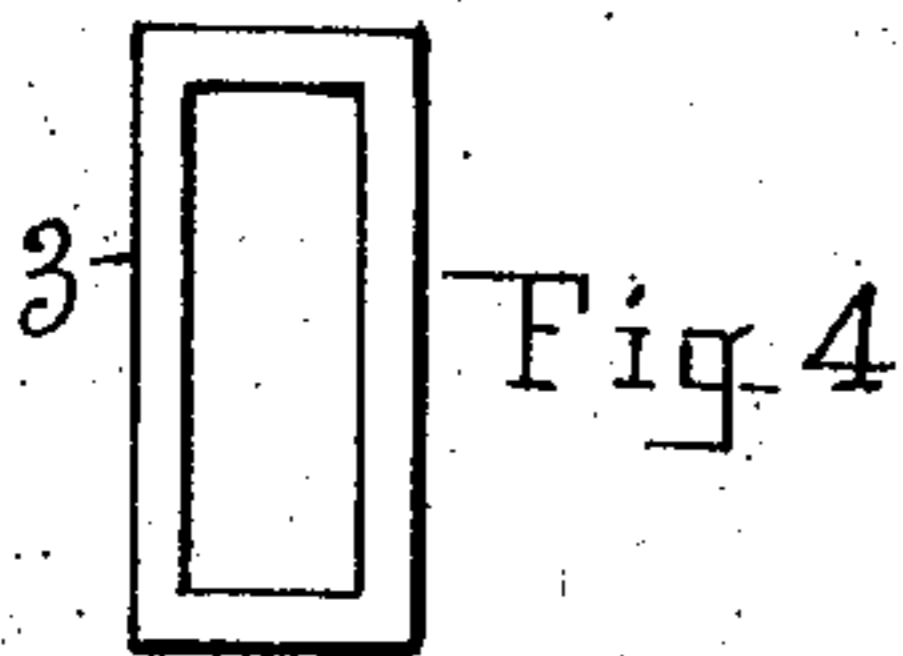
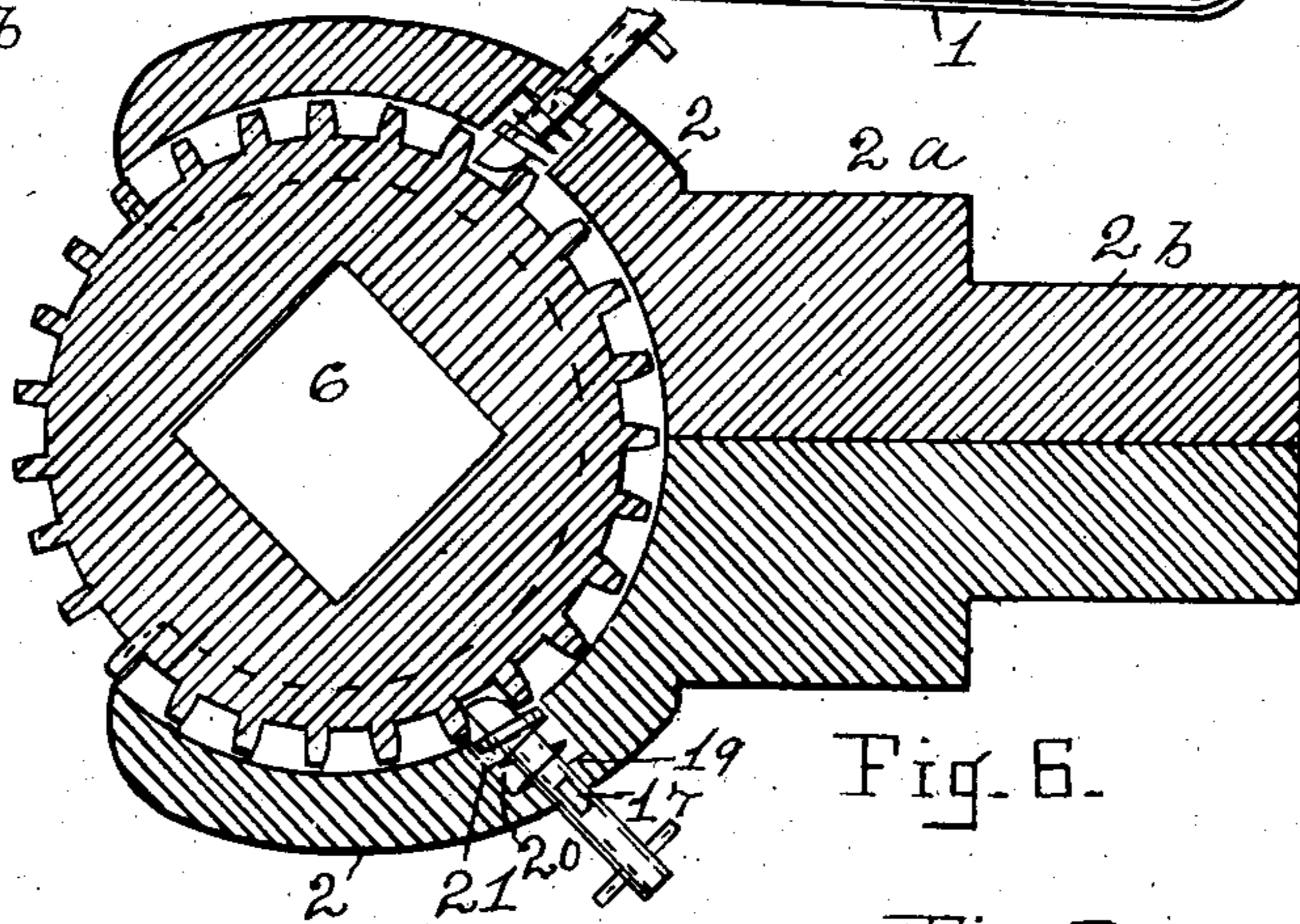
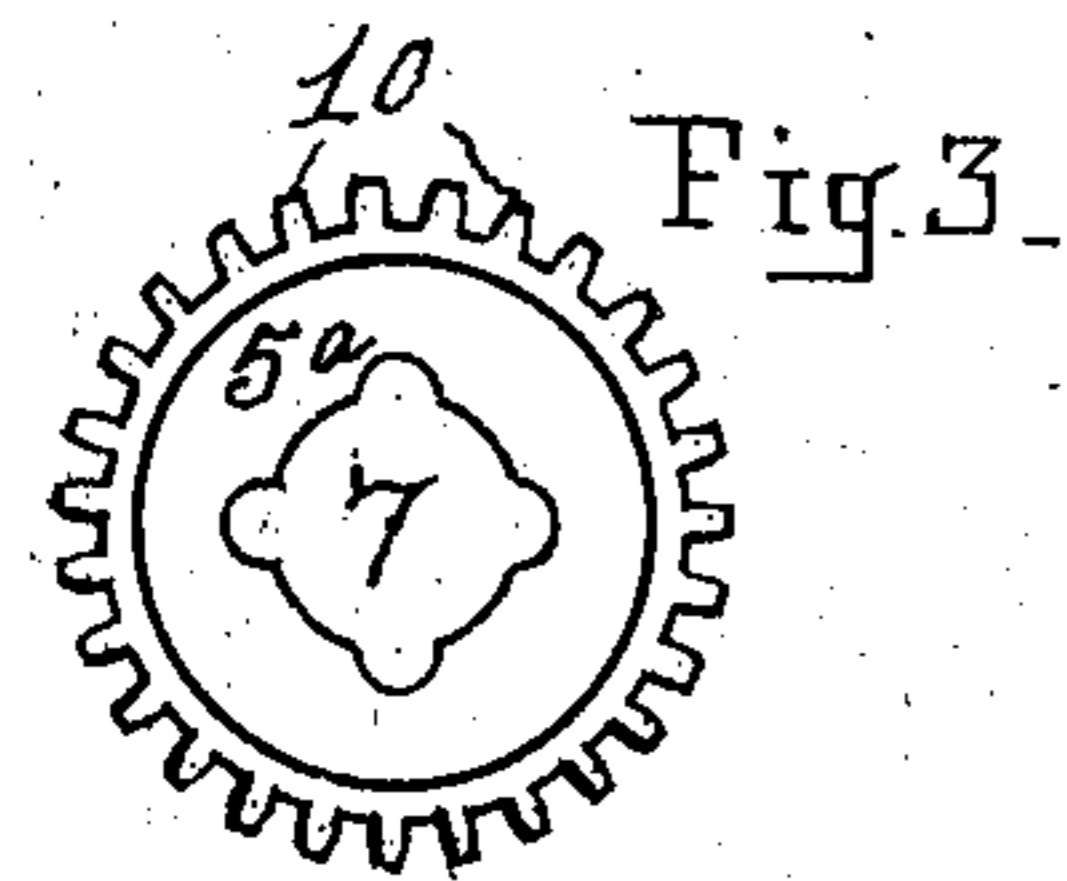
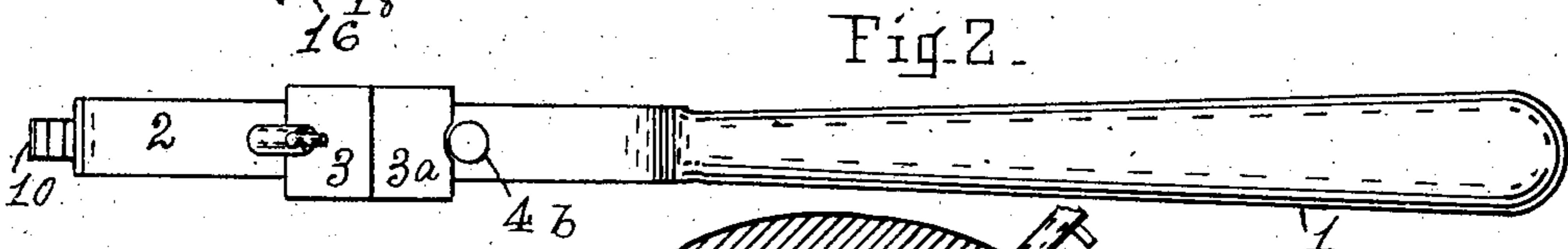
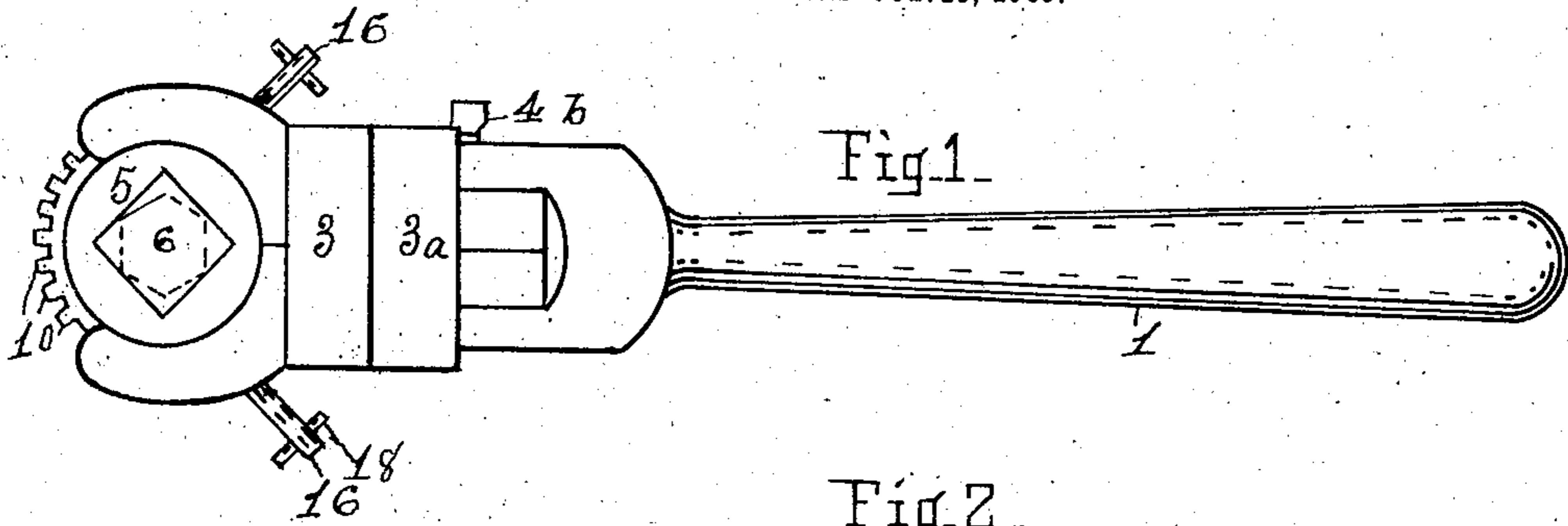


No. 834,219.

PATENTED OCT. 23, 1906.

G. H. YOUNG.
RATCHET WRENCH.

APPLICATION FILED OCT. 23, 1905.



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RATCHET-WRENCH.

No. 834,219.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed October 23, 1905. Serial No. 283,895.

To all whom it may concern:

Be it known that I, GEORGE H. YOUNG, a citizen of the United States, and a resident of Welcome, in the county of Outagamie and State of Wisconsin, have invented a new and useful Improvement in Ratchet-Wrenches, of which the following is a specification.

My invention relates to a ratchet-wrench for general use in machine-shops and upon all descriptions of machines, both as a wrench and for tapping threads in not easily accessible places in machinery and for cutting threads upon bolts in such places, and it is further fitted for use as a socket-wrench.

It consists of a cogged wheel revoluble within a groove in a suitable holder consisting of two similar pieces which are clamped together by means of a band or bands, said wheel being provided with a central perforation for fitting a nut or shank of the thing to be turned or for cutting a thread if for use as a die, said two-part holder having each a shank extending outward a suitable distance for the connection therewith of a handle, the handle being pivoted to the shanks of said two-part holder so as to be turned into a position at right angles with the holder for its use as a socket-wrench, a spring-actuated pawl being arranged in the holder for engagement with the teeth of said wheel and producing a ratchet action thereof, the mechanism being illustrated in the accompanying drawings, in which—

Figure 1 is a plan of the wrench. Fig. 2 is a side view of the wrench. Fig. 3 is a plan of a screw-cutting die adapted for use with said wrench. Fig. 4 is an edge view of a band or clamp for holding the two-part holder together. Fig. 5 is a plan of the pivot-pin which connects the two-part-holder shanks with the handle. Fig. 6 is a plan in section of the two parts of the holder with the cogged wheel in position therein and showing the engagement of the pawl with the teeth of the wheel. Fig. 7 is an edge view of the outside of one part of the holder. Fig. 8 is an edge view of the inside of one part of the holder. Fig. 9 is a plan of the pawl. Fig. 10 is an edge view of the engaging end of the pawl. Fig. 11 is a section through the holder-perforation for receiving the pawl within the holder thereof. Figs. 6 to 11, inclusive, are upon a larger scale than the previous ones.

Similar numerals indicate like parts in the several views.

1 indicates the wrench-handle; 2, duplicate holders having rectangular shanks 2^a and 2^b; 3 and 3^a, bands for clamping said holder together; 4, a pin having a thread 4^a and head 4^b; 5 5^a, a nut-socket and a screw-cutting die, respectively, for fitting within the holders 2; 6, a perforation in nut-socket for fitting a nut, the head of a tap, or other part it is desired to turn around, its form being square, six-sided, or of any desired size or form; 7, a perforation in the screw-cutting die; 10, teeth around the outer edge of the nut-socket and screw-cutting die.

The pawl consists of the catch 12, having a straight face 13, curved back 14, collar 15, stem 16, having thereon the bosses 17 and pin 18, the straight face being for engaging with the teeth 10 and the curved back for allowing said teeth to slide over the catch without becoming engaged therewith. The collar 15 is for preventing the catch from receding too far from the teeth 10 and between which and the shoulder 19 of the pawl-socket 20 a spring 21 is mounted.

The bosses 17 are for holding the dog or catch 12 out of engagement with the teeth 10, the holder-pieces having a circular perforation into the socket 20, at each side of which perforation grooves 22 are provided, into which the bosses are fitted to enter and allow the pawl-pin to slide freely, its sliding outward allowing the bosses to engage the outer surface of the holder and to thereby hold the catch out of engagement with the teeth 10 upon the turning of said pin one-quarter around. By pulling the pin outward and turning it one-quarter around upon the right-hand side of the holder the catch upon the left-hand side when in engagement with the teeth 10 of the nut-socket will allow the screwing on of a right-hand-threaded nut, and upon the throwing of the catch upon the left-hand out of and the one upon the right into engagement said nut can be turned off of its bolt. The pin 18 is only for pulling the catch out of and throwing it into engagement with the teeth 10. The spring 21 acts to throw the catch into engagement with the teeth 10.

The form of the holder-pieces 2 is shown in Fig. 11, the ends of the curved part extending beyond the center of their inner curve,

and within which curve the groove 23 is formed and into which the outer edges of the nut-socket, screw-cutting die, &c., are fitted to enter and operate. The pawl-socket 20 and boss-grooves 22 are also shown in said figure.

The operation of the wrench will be obvious to any mechanic without a further description, as the wrench consists of few parts, which are simple in construction and operation.

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

15 A ratchet-wrench comprising a suitable die or tool holder, having teeth around the same, for engaging the work in hand, a pair of holders for the same in duplicate having suitable shanks, and a smooth-walled internal groove within which the aforesaid die or tool holder is adapted to be retained, a clamping-band fitted to the shanks of said duplicate holders for securing them together, a

spring-actuated pawl arranged in each of said duplicate holders for engaging with the outer circumference of the aforesaid die or tool holder, and for being held out of engagement therewith at will, a handle pivoted to the shanks of said duplicate holders and being adapted to be swung around at right angle with said shanks, and a second clamp-fitted to the shanks of said duplicate holders outside of the first-named clamp and covering the joint of the handle and shanks sufficiently for holding said handle parallel with the shanks of said holder, and a pin for the joint of said handle and shanks arranged to pass through the shanks of said holder and to extend outside thereof sufficiently for retaining the clamping-bands upon said shanks, substantially as described.

GEO. H. YOUNG.

Witnesses:

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