No. 891,559. PATENTED JUNE 23, 1908.

M. H. MILLS.

RATCHET WRENCH.

APPLICATION FILED OCT. 8, 1907.

2 SHEETS—SHEET 1.

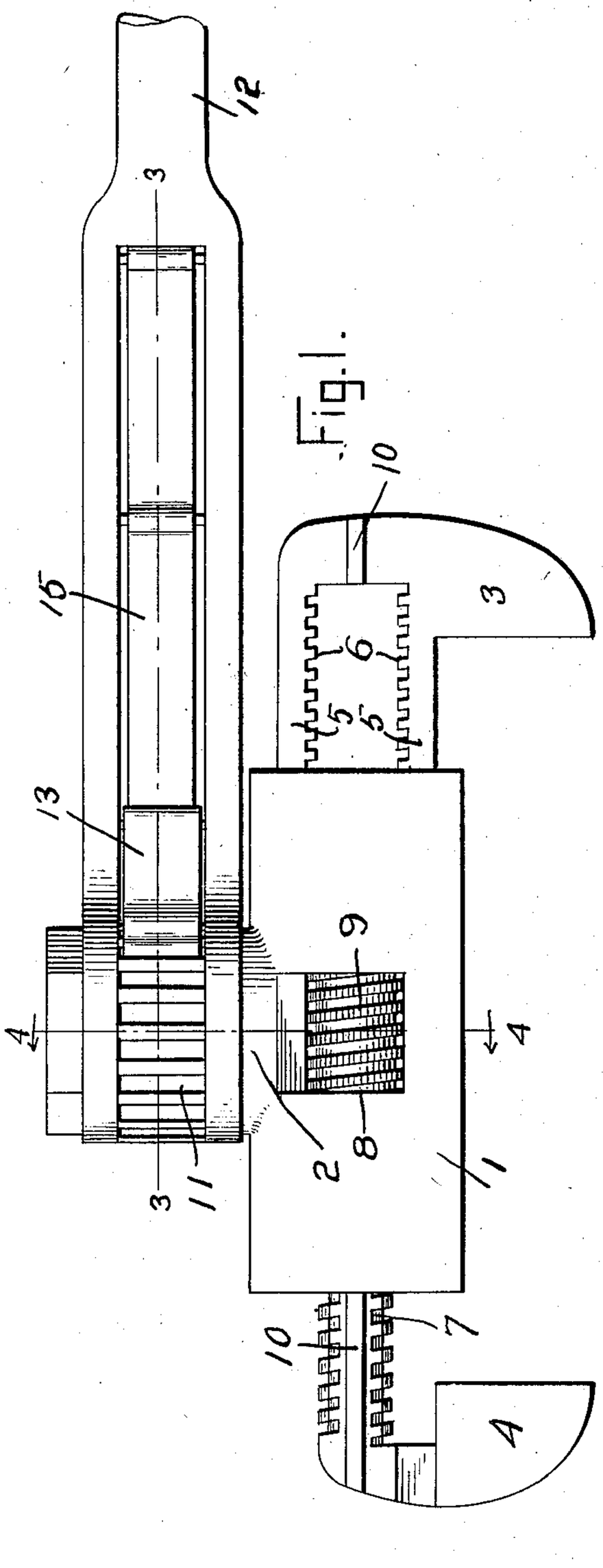

Fig. 1.

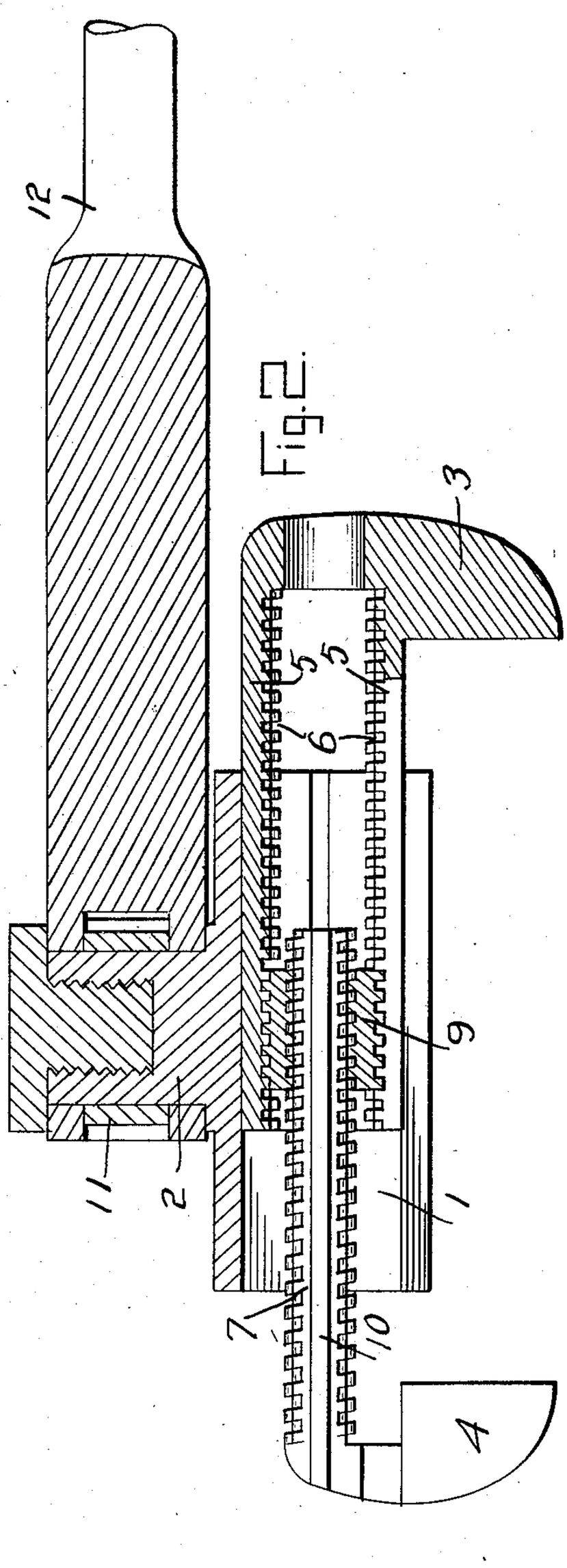

Fig. 2.

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Fig. 3.

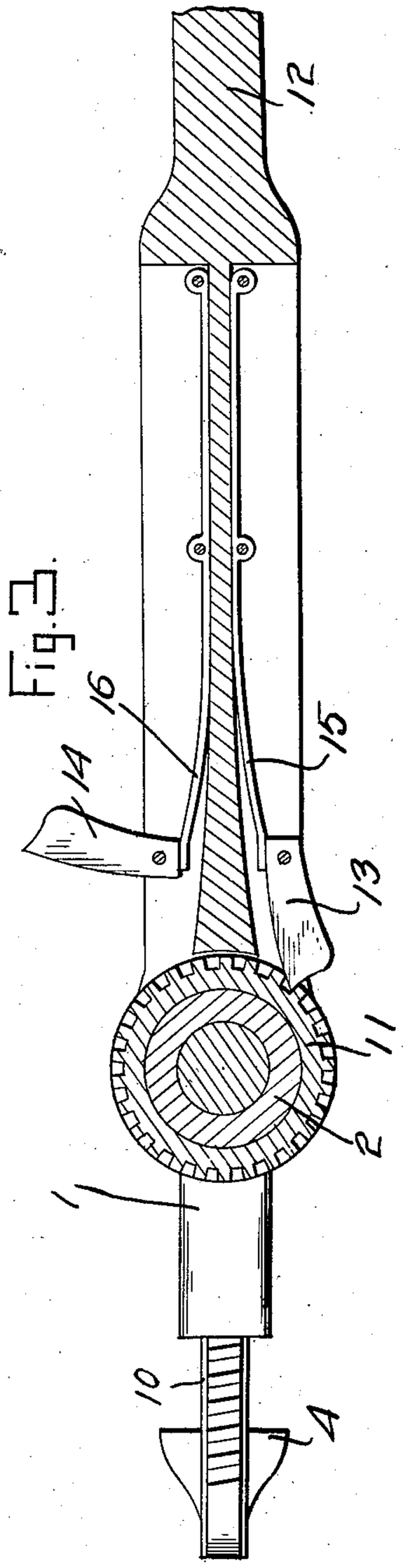
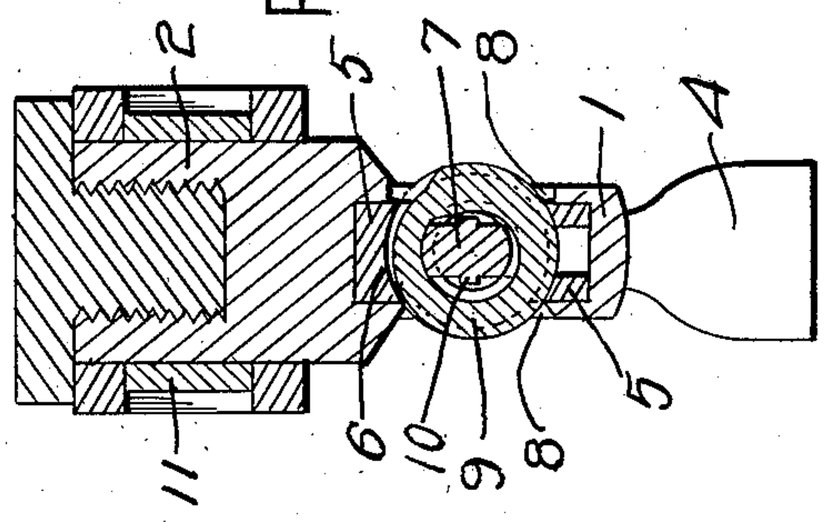


Fig. 4.



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RATCHET-WRENCH.

No. 891,559. Specification of Letters Patent. Patented June 23, 1908.

Application filed October 8, 1907. Serial No. 396,439.

To all whom it may concern:

Be it known that I, MAURICE H. MILLS, a citizen of United States, residing at Foley, in the county of Benton, State of Minnesota, have invented certain new and useful Improvements in Ratchet-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.

This invention has relation to that class of wrenches comprising two movable jaws that are adapted to be adjusted toward and from each other in a common sleeve support, and when closed and tightened upon the object to be rotated by means of a ratchet and lever connected with the jaws.

It is the object of the invention to provide improvements in the manner of constructing the shanks of the jaws and consequently the latter and their associated parts, so as to facilitate the operation of the latter, and, in general, to improve the construction and operation of the wrench as a whole.

Further objects of the invention will clearly appear hereinafter.

The nature of the invention, and a form in which it may be embodied, may be ascertained from the implement portrayed in the annexed drawings, in view of which my improvements will first be described with respect to their construction and mode of operation, and then be pointed out in the subjoined claims.

Of the said drawings—Figure 1 is a side elevation of the wrench complete. Fig. 2 is a longitudinal sectional view of the guide-head, parts being represented in elevation. Fig. 3 is a section on line 3—3 of Fig. 1, looking in the direction of the jaws. Fig. 4 is a section on line 4—4 of Fig. 1.

Similar characters of reference designate similar parts or features, as the case may be, wherever they occur.

In the drawings, 1 designates the elongated guide-head, and, 2, is the standard adapted to receive the ratchet to be operated by the pawl and lever to rotate the guide-head and jaws in the operation of the wrench.

3 designates one of the jaws of the wrench, and 4 the other jaw. Each jaw has a shank extending at a right angle to its face, the shank of the jaw 3 being formed as two separate flattened spaced bars 5 5 provided with teeth 6 on their inner edges, while the jaw 4 has a flattened shank consisting of a single bar 7, toothed and racked on its opposite edges.

The slot in the guide-head 1 extends from end to end thereof, and is formed so as to admit therein the jaw 3 and its shanks 5 5 from one end to a position that it is intended said jaw 3 shall occupy, and also to admit the jaw 4 from the other end, with its shank 7 extending between the shanks 5 5 of the jaw 3, and through a groove in its side, the said shank 7 projecting through the opposite end of the guide-head, when the jaws are brought close together.

The guide-head is provided on opposite sides with openings 8 for the reception of an adjusting-nut 9 to project therethrough, so that said nut may be turned by the thumb and finger. The opening 8 is sufficiently large to permit of lateral movement of the adjusting nut 9 into the guide head 1 after which the shank 7 is moved into initial engagement with the interior threads of the nut and the shanks 5—5 are moved into initial engagement with the exterior threads of the nut. By then rotating the nut, the shanks are drawn further into the head 1 to bring the jaws 3 and 4 toward each other. After engagement of the shank with the adjusting nut, the nut is held against lateral movement from the head 1 and by reason of bearing against the ends of the opening 8 is held against lateral movement.

When the shanks are adjusted in position in the guide-head as stated, the jaws may be adjusted, as is apparent, by the manipulation of the nut so as to bring them closer together or separate them more widely, as desired, and in this way close them upon or loosen them from an object to be turned.

Each jaw will be provided on its side with a rib 10 extending into a groove of corresponding form and position to guide the jaw in its movements and support it from tilting or canting in its operations. The guide-head will be long enough to properly support the parts therein and the ends of the holes through which the sleeve nut 9 is inserted will keep said nut from moving endwise.

The standard 2 extends at a right angle from the guide-head and is provided with the ratchet 11 which may be fixed thereon or form a part thereof. Its teeth are made as fine as practicable so that it may be operated with the least lost motion.

12 designates the handle of the wrench

which is constructed and arranged at its inner end to turn loosely on the standard 2, and is provided on opposite sides with pawls 13 and 14 which are acted upon by springs 15 and 16 in such manner that when one pawl is thrown into engagement with the ratchet wheel, the other will be held out of engagement therewith, as is shown so that the wrench may be turned in either direction, as desired.

The pawls are formed separately and are acted upon by separate springs which operate to hold them in or out of operative position; as shown, accordingly as to how they are turned.

What is claimed is—

1. In a wrench, the combination with a guide-head having a hole formed through it, of the jaws and their shanks supported in said guide-head, the said shanks being constructed and arranged telescopically with respect to each other, and means for operating the shanks and their jaws and maintaining them in fixed position.

2. In a wrench, the combination with a guide-head having a hole formed through it, of the jaws and their shanks supported in said guide-head, the said shanks being constructed and arranged telescopically with respect to each other, and a thumb nut having a threaded engagement with each of the said shanks to operate them and maintain them in fixed position.

3. In a wrench the combination with a guide-head, a rotary shaft connected therewith and extending therefrom at right angles, the guide-head being slotted, jaws provided with telescopic shanks supported in said guide-head, and means for operating said shanks, and means for rotating said shaft.

4. In a wrench a guide-head having an opening therethrough, jaws provided with telescoping shanks supported in said guide-head, and a single device for adjusting said jaws in unison.

5. In a wrench a guide-head having an opening therethrough, jaws provided with telescoping shanks supported in said guide-head, and a thumb-nut having a threaded connection with the shanks for adjusting the same in unison.

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

MAURICE H. MILLS.

Witnesses:

ANNIE N. MILLS,

H. D. MILLS.