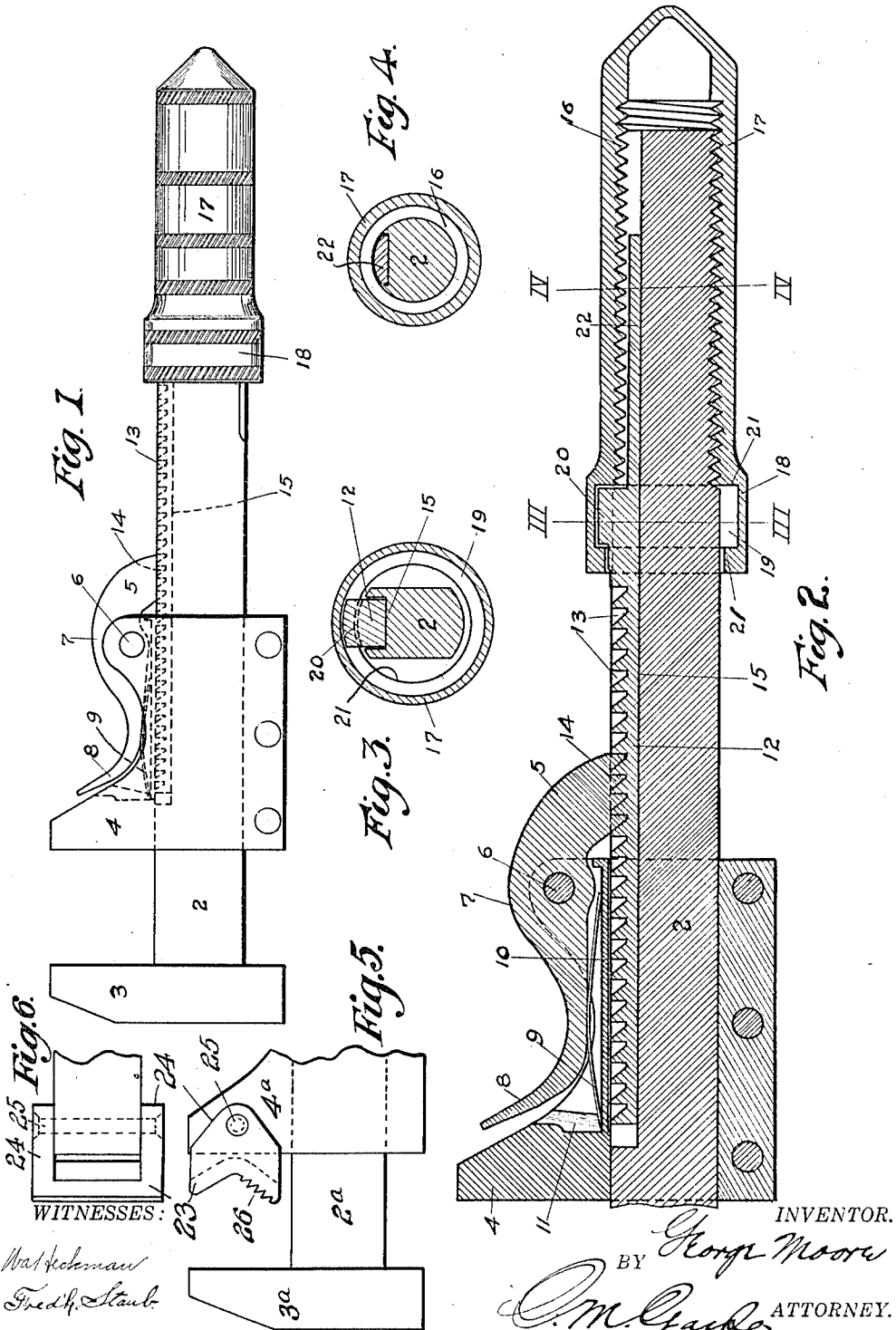


G. MOORE.
WRENCH.

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GEORGE MOORE, OF PITTSBURGH, PENNSYLVANIA.

WRENCH.

1,040,729.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE MOORE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention consists of an improvement in rack wrenches, and has for its object to provide a wrench having an adjustable jaw, a slidingly mounted ratchet bar operable as an abutment for a holding pawl on the jaw, a main shank, and a handle having a screw engagement with the shank and an annular engagement with the rack bar for minute adjustment thereof.

In the drawings—Figure 1 is a view in side elevation of the complete wrench. Fig. 2 is an enlarged longitudinal vertical sectional view, partly broken away. Figs. 3 and 4 are cross sections on the lines III. III. and IV. IV. of Fig. 2. Figs. 5 and 6 are detail views showing modified constructions adapting the wrench to use in gripping pipes, etc.

The wrench is somewhat similar to the general class of rack wrenches, having a main shank 2 and terminal fixed jaw or head 3 and a sliding jaw 4. Said jaw 4 is made in any suitable manner to slide freely along the shank 2 and is provided with a pawl 5 pivoted in suitable bearings on a pivotal pin 6 of the jaw 4 at its inner end. The pawl 5 is curved around in a convex form as indicated at 7 and then curved abruptly upward, providing a thumb terminal 8, adapted to lie normally in close proximity to the inner face of the grasping portion of the jaw 4, as clearly shown. The object of this arrangement is to enable the user to conveniently engage and depress the terminal 8 to lift the pawl 5 out of engagement with the teeth of the rack bar.

A spring 9 of the leaf type is interposed between the under side of the pawl arm 8 and sliding jaw 4, bearing on a flat surface 10 thereof at the bottom of a suitably shaped recess, and one end of the spring 9 is secured in a dovetail retaining cavity 11. The rack bar 12 is provided with a series of rack teeth 13 adapted to provide bearings for the teeth 14 on the inner face of the pawl 5, normally pressed into engagement by the spring 9. The rack bar 12 is seated in a longitudinal recess or channel 15 length-

wise of the shank 2 and the tops of its teeth 13 are flush with the upper edge of the shank, leaving a smooth unobstructed track-way for the jaw 4.

The rear end of the shank 2 is threaded as shown at 16 to receive the handle 17 which is screwed thereon, as shown, for almost its entire length. The outer end of the handle is slightly enlarged, as indicated at 18, providing an inner annular cavity or recess 19. Ratchet bar 12 is provided with a lug or abutment 20 extending into said annular cavity 19 and is engaged by shoulders 21, 21, at each side thereof, when the handle is turned in one direction or the other. The ratchet bar 12 is also provided, inwardly beyond the lug 20, with an extension tail piece 22, which lies along the channel 15, as clearly shown in Fig. 2, and greatly assists in maintaining the rack bar and its lug 20 in operative position.

In action, the jaw 4 is shifted to any position approximating an operative one for the use intended, as around a nut, by using the rack and pawl adjustment. The handle 17 is then rotated, by which action the bar 12 is shifted slightly, within the width of one rack tooth, until the jaw is in gripping engagement for use. By reversing the rotation of the handle the wrench may be loosened in the same manner.

In Figs. 5 and 6 the jaw 4^a of the wrench is provided with an adjustable pipe gripping dog 23 having sides 24 embracing the jaw and pivoted thereto for free action by a pivoting rivet or bolt 25. The inner face of the dog is V-shaped as shown, and provided at one side with teeth 26 adapted to grip the cylindrical surface of a pipe or the like. The dog, being freely pivoted, and having ample clearance at its inner portion adjacent the jaw, will easily adapt itself to gripping engagement with the pipe and will operate to turn it, in conjunction with the terminal fixed jaw 3^a.

What I claim is:—

In a wrench, the combination with a main shank having a terminal jaw at one end, a threaded terminal at the other end, and a longitudinal channel in one of its edges; of a ratchet bar in said channel having a series of rack teeth, a laterally extending lug, and an extension tail piece lying along said channel, a jaw slidingly mounted on said main shank having a pivotally mounted

pawl arm provided with a pawl terminal for engaging the rack teeth and a reversely curved finger terminal, a spring inserted between the finger terminal and the jaw, and
5 a threaded handle screwed on the threaded terminal of the shank and having an interior annular shouldered portion embracing the laterally extending lug of the rack bar, the threads of the handle embracing said

tail piece and retaining it in position in the 10 channel, substantially as set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

GEORGE MOORE.

Witnesses:

C. M. CLARKE,
FREDK. STAUB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
