

No. 777,389.

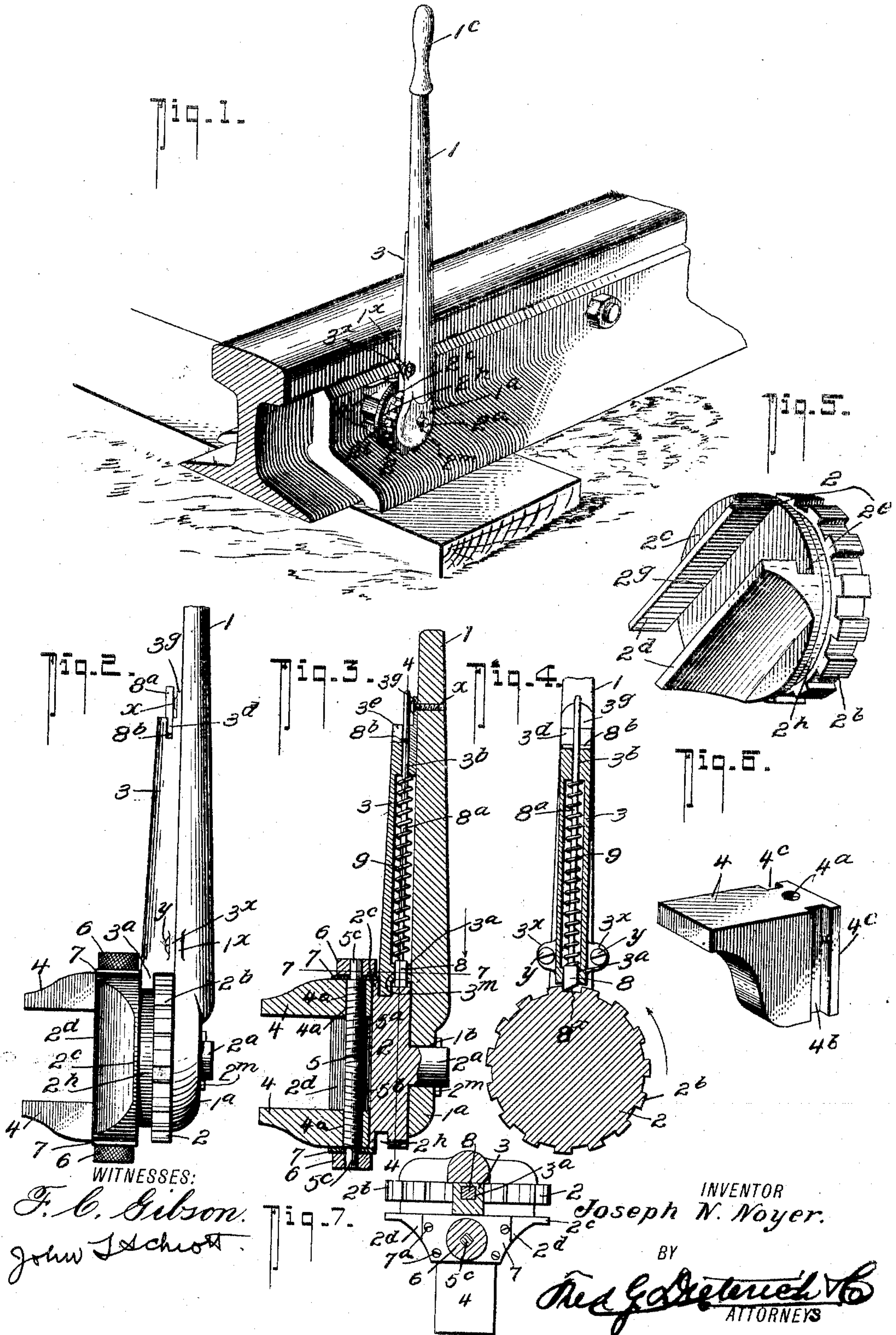
PATENTED DEC. 13, 1904.

J. N. NOYER.

WRENCH.

APPLICATION FILED AUG. 29, 1904.

NO MODEL.



UNITED STATES PATENT OFFICE.

JOSEPH N. NOYER, OF GOULD CITY, WASHINGTON.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 777,389, dated December 13, 1904.

Application filed August 29, 1904. Serial No. 222,617. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH N. NOYER, residing at Gould City, in the county of Garfield and State of Washington, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to certain new and useful improvements in wrenches, and particularly relates to the class of ratchet-wrenches having means for so adjusting the ratchet connection that the wrench may be used either as a ratchet-wrench or as an ordinary turn-wrench.

My invention also includes a pair of jaws so arranged as to be simultaneously moved toward or from the axial line of rotation of the ratchet-wheel.

My invention is also in the nature of an improvement on my Patent No. 757,764, of April 19, 1904.

With other objects in view, which will be hereinafter apparent, the invention also includes certain novel arrangement and combination of parts, all of which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a side elevation of a portion thereof. Fig. 3 is a vertical longitudinal section thereof. Fig. 4 is a vertical section on the line 4 4 of Fig. 3. Fig. 5 is a detail perspective view of the ratchet-wheel. Fig. 6 is a similar view of the jaws. Fig. 7 is a detail cross-section on the line 7 7 of Fig. 3.

Referring now to the accompanying drawings, in which like characters of reference indicate like parts in all of the figures, 1 designates the lever member, whose lower end 1^a is flattened and apertured, as at 1^b, to receive a stub-shaft 2^a of the ratchet-wheel 2 and held in place by a pin 2^m, as shown. To the other extremity of the lever 1 the handle portion 1^c is attached (see Fig. 1) in any suitable manner. The ratchet-wheel 2 includes a stub-shaft 2^a, a ratchet portion 2^b, and a jaw-carrying disk portion 2^c, on the front face of which the jaw-guides 2^d 2^d are formed, and these guides 2^d 2^d are provided with grooves

2^e 2^e and are so arranged with respect to one another as to form a T-slot 2^g for a purpose presently understood. The ratchet portion 2^b and the disk portion 2^c are so arranged with respect to one another as to form a circumferential groove 2^h to receive the lip 3^a of the pawl-carrier 3, hereinafter again referred to. The jaws 4 4 are provided with a threaded bore 4^a and grooves 4^b 4^b in its side faces, which grooves 4^b 4^b form a T-head 4^c to fit and operate in the T-slot 2^g of the ratchet member 2.

5 designates a turn-screw having the reversely-threaded portions 5^a 5^b, and the said screw 5 terminates in the squared ends 5^c, to which the milled heads 6 6 are secured.

7 7 designate screw-plates pivoted over the ends 5^c of the screw 5, and these plates 7 7 are provided with an aperture to allow free turning of the screw. The plates 7 7 are secured to the ratchet member 2 by the screws or pins 7^a 7^a, as clearly shown in Fig. 7.

The pawl-carrier 3 comprises a housing having its bottom provided with a squared aperture 3^m to receive the pawl 8, having a rod 8^a. This rod 8^a extends through an aperture 3^b in the top of the carrier 3 and is provided with a stop-pin 8^b, as shown.

3^d designates a transverse slot in the upper portion of the carrier 3 to receive the pin 8^b, and 3^e designates a second slot of a similar nature located at right angles to the slot 3^d for a purpose presently understood.

9 designates a spring surrounding the rod 8^a and held between the pawl 8 and the top of the pawl-carrier and within the housing to normally hold the pawl 8 in engagement with its cooperating ratchet 2^b.

3^f designates an apertured lip on the pawl-carrier, through which and the lever 1 the securing bolt or screw α passes.

The pawl-carrier 3 and the lever 1 are also formed with ears 3^x 1^x to receive the securing-screws γ , as shown.

From the foregoing it will be seen that when the parts are in the position shown in Figs. 2, 3, and 4 of the drawings the wrench can be readily used as a ratchet-wrench, the movement of the disk being shown by the arrow in Fig. 4. Now by pulling up the rod 8^a and

turning it through an angle of one hundred and eighty degrees and then allowing the spring to press the pawl 8 into its ratchet-engaging position again the wrench will operate as a ratchet-wrench, but will turn the jaw-carrier in the direction opposite that shown by the arrow in Fig. 4.

To use the wrench as a simple turn-wrench, it is only necessary to turn the rod 8^a through an angle of ninety degrees from the position shown in Fig. 4, when the beveled portion 8^x of the pawl 8 will be at right angles to the position shown in Fig. 2, bringing the parallel side faces of the pawl 8 (which is square in cross-section) so that they will engage the ratchet at both sides of the pawl, and thereby prevent a ratchet movement between the lever and the jaw-carrier.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete construction, operation, and many advantages of my invention will be readily understood by those skilled in the art to which it appertains, and I desire it understood that slight changes in the detail construction and arrangement of parts may be made without departing from the scope of the invention and the appended claims.

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

1. A wrench of the class described, comprising a lever having a flattened apertured head portion, a ratchet-wheel having a stub-shaft projecting through said head-aperture, said ratchet-wheel including a ratchet portion and a jaw-carrying disk, said disk having integrally-formed grooved guide members forming a T-shaped guideway, a pair of jaws having threaded bores and parallel side slots to form T-heads, said jaws slidably held in said T-shaped guideway, a reversely-threaded screw held in said jaw-apertures, turn-heads secured to the ends of said screws, means secured to the ratchet-wheel guide members at each end of the screw for preventing endwise movement of the screw with respect to the ratchet-wheel, a pawl-carrier secured to the lever and a pawl operatively held in said carrier.

2. A wrench of the class described, comprising a lever having a flattened apertured head portion, a ratchet-wheel having a stub-shaft projecting through said head-aperture, said ratchet-wheel including a ratchet portion and a jaw-carrying disk, said disk having integrally-formed grooved guide members forming a T-shaped guideway, a pair of jaws having threaded bores and parallel side slots to form T-heads, said jaws slidably held in said T-shaped guideway, a reversely-threaded screw held in said jaw-apertures, turn-heads secured to the ends of said screws, means secured to the ratchet-wheel guide members at each end of the screw for preventing endwise

movement of the screw with respect to the ratchet-wheel, a pawl-carrier secured to the lever and a pawl operatively held in said carrier, and means for locking said pawl with respect to the ratchet-wheel to cause the lever and ratchet-wheel to turn together in either direction.

3. A wrench of the character described, comprising a lever having a flattened apertured head portion, a ratchet-wheel having a stub-shaft projecting through said head-aperture, said ratchet-wheel including a ratchet portion and a jaw-carrying disk, said disk having integrally-formed grooved guide members forming a T-shaped guideway, a pair of jaws having threaded bores and parallel side slots to form T-heads, said jaws slidably held in said T-shaped guideway, a reversely-threaded screw held in said jaw-apertures, turn-heads secured to the ends of said screws, apertured guard-plates secured to the jaw-carrying disk over the screw ends to hold the screw from endwise movement, a pawl-carrier secured to the lever, a pawl having a rod held in said carrier, a spring on said rod to hold the pawl to its ratchet-engaging position, a stop-pin secured to the rod, said carrier having a transverse slot to receive said pin when the pawl is in its ratchet position, and having a second slot at right angles to the first slot to hold the pawl in its locked position substantially as described.

4. A wrench of the class described, comprising a lever having a flattened apertured head portion, a ratchet-wheel having a stub-shaft projecting through said head-aperture, said ratchet-wheel including a ratchet portion and a jaw-carrying disk, said disk having integrally-formed grooved guide members forming a T-shaped guideway, a pair of jaws having threaded bores and parallel side slots to form T-heads, said jaws slidably held in said T-shaped guideway, a reversely-threaded screw held in said jaw-apertures, turn-heads secured to the ends of said screws, apertured guard-plates secured to the jaw-carrying disk over the screw ends to hold the screw from endwise movement, a pawl-carrier secured to the lever, a pawl having a rod held in said carrier, a spring on said rod to hold the pawl to its ratchet-engaging position, a stop-pin secured to the rod, said carrier having a transverse slot to receive said pin when the pawl is in its ratchet position, and having a second slot at right angles to the first slot to hold the pawl in its locked position, said ratchet-wheel having a circular groove and said pawl-carrier having a lip for entering said groove, said lever and said pawl-carrier having a pair of ears, securing devices passing through said ears to secure the pawl-carrier and lever together, said pawl-carrier having a third ear, and means passing through said third ear and said lever for securing the

pawl-carrier to the lever, all being arranged substantially as shown and for the purposes described.

5 5. A wrench of the character described, comprising a lever having a flattened apertured head portion and a ratchet-wheel having a stub-shaft projecting through said head-aperture, said ratchet-wheel having integrally-
10 shaped guideway, a pair of jaws having threaded bores and parallel side slots to form T-heads, said jaws being slidably held in said T-shaped guideways, and a reversely-threaded screw held in said jaw-apertures, said screw
15 being provided with shoulders near each end, turn-heads secured to the ends of the screws, apertured plates secured to the grooved guide members of the jaw-carrying disk, said screw having its ends passed through said guard-
20 plate apertures, said guard-plates being disposed between the turn-heads and the screw-shoulders to hold the same from endwise movement with respect to the jaw-carrying

disk, a pawl-carrier secured to the lever, a pawl having a slot held in said carrier, a 25 spring on said carrier to hold the pawl to its ratchet-engaging position, a stop-pin secured to the ratchet, said carrier having a transverse slot to receive said pin when the pawl is in the ratchet position, and having a second slot at right angles to the first slot to hold the pawl in its locked position, said
30 ratchet-wheel having a circular groove and said pawl-carrier having a lip for entering said groove, said lever and said pawl-carrier 35 having a pair of ears, securing devices passing through said ears for securing the pawl-carrier and lever together, said pawl-carrier having a third ear, and means passing through said third ear and said lever for securing the
40 pawl-carrier to the lever, all being arranged substantially as shown and described.

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Witnesses:

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