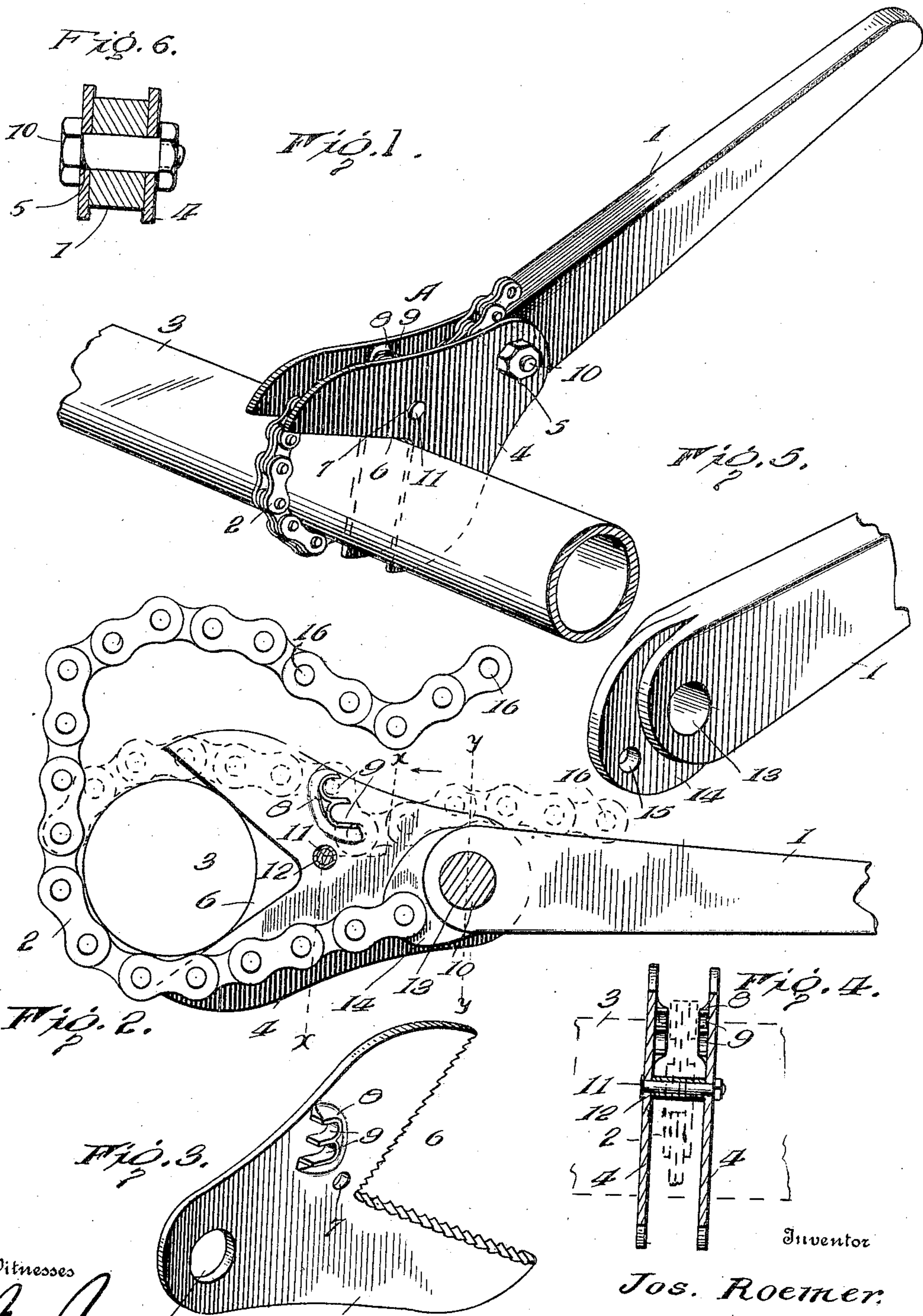


No. 822,017.

PATENTED MAY 29, 1906.

J. ROEMER.
PIPE WRENCH.

APPLICATION FILED APR. 14, 1905.



Witnesses

Wm. H. Woodson

By

Ph. A. Lacey Attorneys

Inventor

Jos. Roemer

UNITED STATES PATENT OFFICE.

JOSEPH ROEMER, OF SANTA MARIA, CALIFORNIA.

PIPE-WRENCH.

No. 822,017.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed April 14, 1905. Serial No. 255,646.

To all whom it may concern:

Be it known that I, JOSEPH ROEMER, a citizen of the United States, residing at Santa Maria, in the county of Santa Barbara and State of California, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

The invention contemplates a head, an operating-lever pivoted to the head, and a flexible grip for embracing the work and tightened and relaxed by an oscillatory movement of the operating-lever, the parts being constructed and combined in a novel manner, which hereinafter will be more particularly set forth, illustrated, and finally claimed.

In the accompanying drawings, forming a part of the specification, Figure 1 is a perspective view of a pipe-wrench embodying the invention. Fig. 2 is a side view thereof, a portion of the operating-lever being broken away, the plate on the inner side omitted and showing two positions of the chain by full and dotted lines. Fig. 3 is a detail perspective view of a side plate. Fig. 4 is a transverse section of the wrench on the line xx of Fig. 2 looking in the direction of the arrows. Fig. 5 is a detail perspective view of the inner or pivotal end of the operating-lever. Fig. 6 is a transverse section of the wrench on the line yy of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The wrench comprises a head A, operating-lever 1, and flexible grip 2. The inner end portion of the head is tapered to conform approximately to the operating-lever 1 and provide a neat finish, whereas the outer end is formed with a V-shaped notch or indentation to receive the pipe or work 3. The head is preferably constructed of similar side plates 4, each being provided in its tapered end portion with an opening 5 and having a V-shaped notch or indentation 6 in its wider end. An opening 7 is formed in the plate adjacent to the inner end of the notch or indentation 6. A lug is formed upon the inner side of each plate and is provided in one edge with a series of notches 9 to admit of adjustable connection with the head A of the flexible grip 2. The plates 4 are connected by pins or bolts 10 and 11, the former being passed through the openings 5 and the latter through openings 7. A sleeve 12 is mounted

upon the pin 11 and serves to properly space the plates.

The operating-lever 1 has an opening 13 at its inner end to receive the pin 10, by means of which it is pivotally connected to the wrench-head. The pivotal end portion of the operating-lever is reduced upon opposite sides to form the web projection 14, in which an opening 15 is provided. The web projection 14 extends farther to one side of the operating-lever and has the opening 15 therein, said opening being arranged to one side of a medial line of the operating-lever. This arrangement admits of the operating-lever occupying a central position with reference to the head 4 and the work when the tool is fitted to the latter and admits of the grip being tightened upon moving the lever a like distance in either direction. Hence the tool may be applied to the work in any position and will operate with equal effectiveness upon oscillating the lever after moving it either to the right or to the left of a given position. A gripping and operating force may be applied to rotate the work either forward or backward without requiring the removal of the tool from the work and its readjustment and fastening of the grip.

As shown in Fig. 2, the center or axis of movement of the operating-lever is practically in a straight line with the pivot connection of the grip 2 therewith and with the point of contact of said grip with the work on the same side of the wrench as the fast end of said grip. It follows that a movement of the operating-lever in either direction throws the pivot connection of the grip with the lever out of line with the other points and tightens said grip proportionate to the degree of force applied to the operating-lever to effect a turning of the work.

The flexible grip 2 may be of any construction, and preferably consists of a chain the links of which are connected by pins or cross-bars 16, whose ends project beyond the sides of the outermost bars of the links to admit of engagement with the notches 9 of the inner lugs or projections 8. One end of the flexible grip is connected to the operating-lever by means of a pin which is passed through the opening 15. The opposite end portion is adapted to make adjustable connection with the wrench-head by having the projecting ends of selected pins 16 fitted into one or the other of the sets of notches 9. A movement of the outer end of the operating-lever in one

direction or the other draws upon the flexible grip and tightens its hold upon the work, and a continued movement causes rotation of the work. By oscillating the operating-lever the hold of the grip 2 is alternately relaxed and tightened, thereby admitting of using the wrench after the manner of a ratchet-wrench of any well-known construction.

10 By having the side plates 4 separately formed they may be cast, drop-forged, or otherwise constructed in a simple and practicable way, and the parts may be readily assembled. Moreover, in the event of one or 15 the other of the plates becoming unfitted for further effective work it may be readily replaced. The parts of the grip attached to the wrench-head are confined between the side plates. Hence the strain is equalized upon all 20 parts of the wrench-head and operating-lever and there is no tendency of the wrench to side draft or stress, which would be liable to exist if the wrench-head did not provide firm contact with the work upon each side of the 25 grip and embrace the latter.

Having thus described the invention, what is claimed as new is—

1. A wrench comprising a head, an operating-lever pivoted to said head and having its 30 end extended beyond the pivot connection toward the gripping end of said head, and a flexible grip attached at one end to the extended end of the operating-lever to one side of the axis or center of movement of said lever when the latter is in normal or central position, and adapted to have its opposite end 35 connected to the wrench-head upon the side thereof opposite to the fast end of the grip, the parts being arranged to admit of the axis

of the operating-lever, the point of connection of the grip therewith and the point of 40 contact of the grip with the work occupying a substantially straight line when the wrench is initially applied to the work, with the fast end of the grip occupying an intermediate 45 position, whereby movement of said operating-lever either to the right or to the left of said straight line causes the grip to instantly tighten, thereby permitting the work to be turned backward or forward without removing the wrench therefrom. 50

2. A wrench comprising a head having a work-receiving seat in its outer end, an operating-lever pivoted near one end to the inner end of the wrench-head, a flexible grip pivoted 55 to the inner end of the operating-lever to one side of the axis thereof when said lever is standing straight with the wrench-head and work, the axis of the lever, the pivot connection of the grip therewith and the point of 60 contact of the fast end of the grip with the work being in a substantially straight line when the lever is in normal position, whereby a movement of the lever in either direction will instantly tighten the grip to admit 65 of turning the work either forward or backward by a ratchet action without removing the wrench therefrom, and means for adjustably connecting the opposite end of the grip directly to the wrench-head on the side opposite 70 to the fast end of the grip.

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

JOSEPH ROEMER. [L. s.]

Witnesses:

GEO. P. MERRITT,
E. T. KETCHAM.