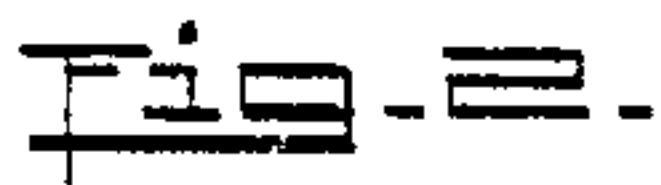


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BY *Mumme*
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UNITED STATES PATENT OFFICE.

HARRY PHELAN, OF JIMENEZ, MEXICO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 778,704, dated December 27, 1904.

Application filed July 6, 1904. Serial No. 215,464.

To all whom it may concern:

Be it known that I, HARRY PHELAN, a citizen of the United States of America, and a resident of Jimenez, Republic of Mexico, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

This invention relates to improvements in wrenches of the type having a fixed jaw and a sliding jaw, an object being to provide a wrench of this character that will be comparatively light yet strong and that may be quickly adjusted to a nut or pipe.

I will describe a wrench embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a wrench embodying my invention. Fig. 2 is a section on the line *x x* of Fig. 1. Fig. 3 is a similar section, but showing the parts in different position. Fig. 4 is a perspective view of the locking-block employed. Fig. 5 is a section on the line *y y* of Fig. 6, and Fig. 6 is an inner face view of the movable jaw.

The handle or shank of the wrench consists of two bar members 1 2, which are spaced apart, and their inner faces are provided with teeth 3, which are arranged at a transverse incline. Secured to the bars 1 2 is a fixed jaw 4. As here shown, the jaw 4 is removably connected to the bars by means of screws 5. Movable lengthwise of the shank is a jaw 6, having a chamber 7, in which a locking-block 8 is arranged for slight rotary movement. The block on its opposite sides is inclined to correspond to the incline of the inner faces of the bars 1 2, and on these inclined portions of the block are ratchet-teeth 9 for engaging with the ratchet-teeth 3. The block 8 is attached to a rod 10, which has bearings in plates 11 12, removably secured to the front and rear sides of the jaw 6, and this rod 10 extends rearward through an opening in a yoke 13, removably attached to the outer ends or near the outer ends of the bars 1 2, and this rod 10 serves to guide and strengthen the mov-

able part. At one side the jaw 6 is provided with a recess 14 to receive a plate 15, secured to the block 8 and designed to be engaged by a person to rock the block out of engagement with the teeth 3 when it is desired to move the jaw 6 along the shank.

Arranged on the inner side of the sliding jaw 6 is a gripping member consisting of a block 16, having ratchet-teeth 17 arranged in reverse direction to the ratchet-teeth 18 on the jaw 4. This gripping member has swinging and sliding longitudinal movement with relation to the jaw 6. As here shown, the gripping member is connected to the jaw 6 by lower links 19 at opposite sides, which swing on pins 20, connected to the block 16, and a pin 21, connecting said links, passes through a transverse slot 22, formed through the jaw 6, this slot being inclined upward and forward, so as to throw the part 16 inward, as will be hereinafter described.

It will be noted that the sides of the jaw are recessed where the links 19 engage therewith, so that the outer surface of the links will not project beyond the outer surfaces of the jaw.

Upper links 23 are mounted to swing on pins 24, attached to the jaw 6, and pins 25 on the member 16 pass into slots 26 in the links 23. On its side adjacent to the jaw 6 the member 16 is provided with a shoulder 27, designed to be engaged by a pawl 28, mounted to swing in a recess 29, formed in the jaw 6, and this pawl is held yieldingly against the member 16 by means of a spring 30, operating in a perforation 31 in the jaw and engaging against a pin 32, which bears upon the pawl.

In operation when it is desired to slide the jaw 6 along the shank the locking-block is to be rotated to disengage its teeth from the teeth 3, as indicated in Fig. 3. When proper adjustment of the jaw 6 has been made, the block is to be turned back to engage its teeth with the teeth of the bars 1 2, as indicated in Fig. 2. Upon engaging the jaw 4 and the gripping member 16 with the nut or pipe the said gripping member will be first swung inward or toward the jaw 6; but immediately upon movement of the handle or shank in the direction to remove the nut or to unscrew the pipe the gripping member will be moved

slightly toward the bar 2, and the lug 28 by engaging with the shoulder 27 will cause the gripping member to move toward and tightly grip the nut or pipe.

5 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A wrench comprising a fixed jaw and a sliding jaw, a gripping member having swing-
10 ing link connection with the sliding jaw and having a shoulder on its side adjacent to said jaw, and a spring-pressed pawl arranged in said jaw and adapted to engage with said shoulder.

2. A wrench comprising a shank consisting
15 of two spaced bars, the inner sides thereof being transversely inclined and provided with teeth, a jaw attached to one end of the bars, a jaw slidable on the bars and having a chamber, a locking-block arranged in said chamber,
20 a rod to which the block is connected, plates at the front and rear side of the sliding

jaw forming bearings for said rod, a thumb-piece on said block, and a yoke attached to the outer ends of said bars and having a perforation through which the rod extended from the
25 locking-block may slide.

3. A wrench comprising a shank, a fixed jaw thereon, a jaw mounted to slide on the shank, means for locking the sliding jaw, a gripping member, link connections between
30 said gripping member and the movable jaw, and a pawl mounted to swing in the movable jaw to cause the outward movement of the gripping member during its longitudinal movement.

In testimony whereof I have signed my name
35 to this specification in the presence of two subscribing witnesses.

HARRY PHELAN.

Witnesses:

G. C. CAROTHERS,
J. P. WANTZLOCHEN.