

UNITED STATES PATENT OFFICE.

FRED AUGUSTIN CARRITHERS, OF PEKIN, ILLINOIS.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 512,007, dated January 2, 1894.

Application filed September 19, 1893. Serial No. 485,814. (No model.)

To all whom it may concern:

Be it known that I, FRED AUGUSTIN CARRITHERS, of Pekin, in the county of Tazewell and State of Illinois, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

My invention relates to improvements in wrenches; and the object of my invention is to produce a very simple, strong and inexpensive wrench, which may be quickly adjusted, which when approximately adjusted in the usual way may be clamped still more tightly to the object to which it is applied, and which is especially adapted for a pipe wrench having means to clamp an elbow efficiently, but which may be used as an ordinary monkey wrench.

To these ends my invention consists of certain features of construction and combinations of the same, as will be hereinafter described and claimed.

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

Figure 1 is a central longitudinal section of the wrench embodying my invention. Fig. 2 is a front elevation of the same; and Fig. 3 is a side elevation of a slightly modified form of the wrench.

The wrench is provided with a fixed jaw 10, of substantially the shape common to monkey wrenches, but the gripping face of this jaw is grooved longitudinally, the groove 11 being of V-shaped cross section, and the face is also provided with teeth 12 to enable it to firmly grip a pipe. The groove 11 is intended to fit over the flange or rim of an elbow so that the face of the jaw may impinge on the body of the elbow without slipping.

The fixed jaw 10 is formed integral with a shank 13 which extends in the usual way at right angles to the jaw, and the shank terminates at the end opposite the head in a screw 14 which fits a nut 15 in the handle 16, this handle having a bore 17 to receive the threaded end of the shank. Lying parallel with the front face of the shank 13 is a ratchet bar 18 which is connected, as shown at 19^a, to the handle 16, so as to be capable of turning in relation to the handle, but incapable of lon-

gitudinal movement relatively thereto, so that as the handle moves forward or backward the bar 18 will be advanced or retracted with it.

The ratchet bar 18 is slotted longitudinally, as shown at 19, and projecting into this slot is a pin 20 which is fixed to the shank 13 of the wrench and which limits the movement of the ratchet bar in relation to the shank 13. The ratchet bar 18 has ratchet teeth 21 thereon, to engage a pawl 22 pivoted in the recess 23 in the shank 24 of the fixed jaw 25, which jaw and shank slide on the shank 13, and the pawl is pressed by a spring 26 so as to hold it in normal engagement with the teeth 21, and thus the movable jaw 25 is kept from sliding accidentally back.

It will be seen that by releasing the pawl 22, the jaw 25 and its shank may be slipped freely back and forth on the shank 13 and ratchet bar 18, and thus the movable jaw 25 may be quickly adjusted so that an object may be clamped between it and the fixed jaw 10, and by releasing the pawl 22 the jaw 25 is locked in position. This jaw is grooved and provided with teeth like the jaw 10, and its back is cut away preferably, as shown at 26^a, to make it light.

After the jaw 25 has been approximately adjusted, that is, pushed as closely to the object to be clamped as it can be by simply sliding it on the shank 13, the handle may then be turned so as to cause the nut 15 to act on the screw 14 and draw the handle toward the jaws, and this pushes up the ratchet bar 18 which, acting on the pawl 22 and jaw 25, crowds the latter firmly against the object to which the wrench is clamped and the wrench is therefore not likely to slip.

In Fig. 3 is shown a slightly modified form of the wrench, in which the movable jaw 25 is beveled slightly as at 27, to enable it to fit certain parts better, and the jaws, as here illustrated, have plane faces but they may be grooved and provided with teeth, as shown in Figs. 1 and 2. In Fig. 3 the ratchet bar 18 has square teeth instead of ratchet teeth, and the pawl 22 is shaped to fit snugly between the teeth.

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 shank connected thereto, a handle connected to the shank, a ratchet bar held against longitudinal displacement in relation to the handle, a movable jaw adapted to slide on the shank and on the ratchet bar, and a screw mechanism to move the handle with the ratchet bar longitudinally of the shank, substantially as described.
2. A wrench comprising a fixed jaw and a screw-threaded shank connected thereto, a handle into which extends the screw-threaded end of the shank, a ratchet bar held against longitudinal displacement in relation to the handle, yet capable of turning in relation thereto, a movable jaw adapted to slide on the shank and on the ratchet bar, means for

locking the movable jaw in relation to the ratchet bar, and a nut rigidly connected with the handle and adapted to engage the screw-threaded portion of the shank, as and for the purpose set forth.

3. In a wrench, the combination, with a fixed jaw and a movable jaw each having an essentially straight clamping surface, the said clamping surfaces being toothed and longitudinally grooved, of means for adjusting the jaws in relation to one another, substantially as described.

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Witnesses:

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