

R. M. HARRIS & W. L. BOTTOMS.
WRENCH.

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1,007,101.

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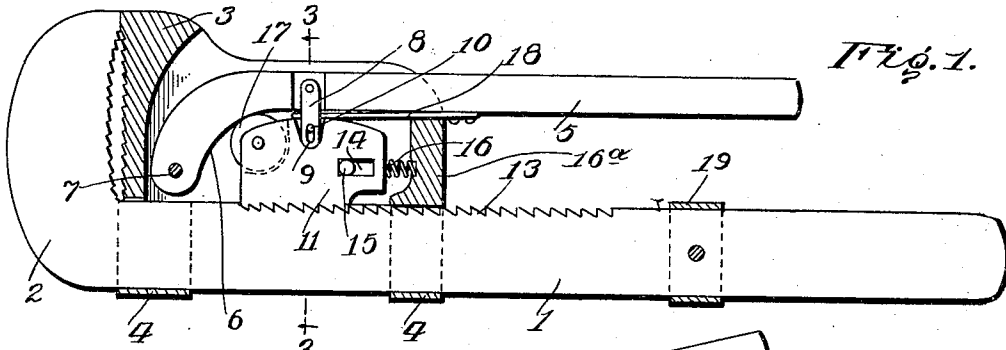


Fig. 1.

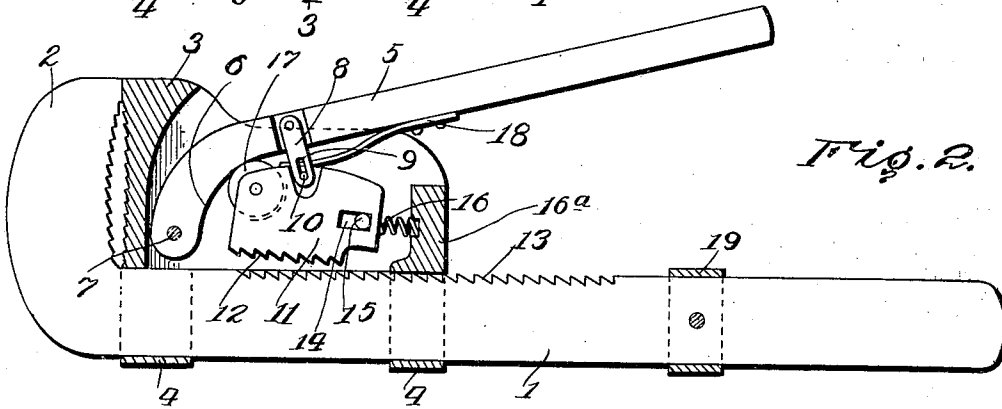


Fig. 2.

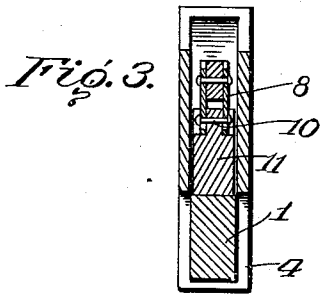


Fig. 3.

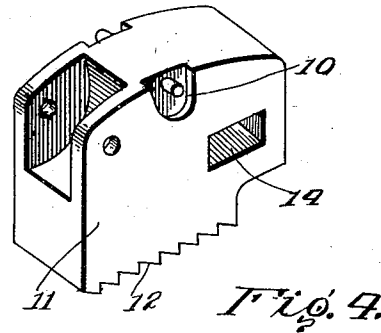


Fig. 4.

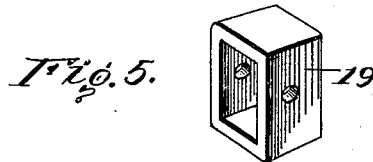


Fig. 5.

Witnesses
W. W. Woodman.
L. H. Platt.

Inventors
Robert M. Harris
and William L. Bottoms.

By

Harris & Bottoms
Attorneys

UNITED STATES PATENT OFFICE.

ROBERT M. HARRIS AND WILLIAM L. BOTTOMS, OF BYERS, TEXAS.

WRENCH.

1,007,101.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ROBERT M. HARRIS and WILLIAM L. BOTTOMS, citizens of the United States, residing at Byers, in the county of Clay and State of Texas, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention comprehends certain new and useful improvements in wrenches of the quick adjustment type, and the invention has for its primary object a simple, durable and efficient construction of device of this character and the parts of which are so arranged that a very quick adjustment of the relatively movable jaw may be effected, whereby the connection between the rack bar of the shank and the toothed clutch carried by the movable jaw may be quickly broken preparatory to changing the adjustment, and whereby the movement of the clutch into engagement with the rack of the shank will be automatically accompanied with or immediately followed by the forward pressing of the movable jaw toward the relatively stationary jaw so as to tightly maintain the jaws in engagement with the work. And the invention also aims to simplify, render more durable, and otherwise better improve this class of devices so as to make them more useful and commercially desirable.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that we shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figures 1 and 2 are longitudinal sectional views of our improved wrench, parts being shown in side elevation, Fig. 1 showing the wrench locked and Fig. 2 showing the wrench unlocked; Fig. 3 is a transverse sectional view of the wrench on the line 3—3 of Fig. 1; Fig. 4 is a detail perspective view of the clutch employed; and, Fig. 5 is a similar view of a stop collar.

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.

Our improved wrench comprises a shank

1 formed or provided at one end with any desired form or construction of handle, and preferably integrally connected at its opposite end with the relatively stationary jaw 2. 3 designates the relatively movable jaw of the wrench. The jaw 3 is provided with yokes 4 by which it is mounted for a sliding movement on the shank 1.

The jaw 3 is formed with a chamber designed to accommodate the actuating parts of the wrench, one of which has a hand lever 5 provided with an angularly disposed and preferably curved forward end 6, fulcrumed in the chamber of the jaw 3 on a transverse pivot pin 7. Links 8 are pivotally connected to the hand lever 5 intermediate of the ends of the latter, said links being slotted, as indicated at 9, to receive studs 10 that project laterally from a clutch 11 in the form of a block, as best illustrated in Fig. 4. The clutch 11 is toothed, as indicated at 12, the teeth of the clutch being designed for engagement with the teeth of a rack bar 13 which is formed on or secured to the adjoining edge of the shank 1.

The clutch 11 is formed near its rear end with a longitudinally extending transversely opening slot 14 in which is received a cross bar 15 upon which the clutch is movable, the cross bar being connected at its ends to the movable jaw 3. A coil spring 16 is countersunk at its forward end in the rear end of the clutch 11, the rear end of the spring being correspondingly held in a solid wall 16^a defining the rear end of the chamber formed in the jaw 3. A roller 17 is carried by the clutch 11 and projects upwardly and forwardly therefrom, the roller being designed for engagement with the lower rear edge of the curved or angularly disposed portion 6 of the hand lever 5. A leaf spring 18 is riveted or otherwise secured at its rear end to the inner edge of the hand lever 5 and projects forwardly between the links 8 into engagement with the outer edge of the clutch 11, the spring exerting its tension on said clutch in a direction to force the same positively into engagement with the rack bar 13 of the shank 1 when the hand lever 5 is rocked toward the shank. 19 designates a stop collar which is secured to the handle end of the shank 1, so as to prevent the complete withdrawal of the movable jaw from the shank in the rearward opening movement of the former.

From the foregoing description in connec-

tion with the accompanying drawing, the operation of our improved wrench will be apparent. In the practical use of the device, an outward swinging of the hand lever 5 will permit the spring 16 to positively force the clutch 11 forwardly and also outwardly from engagement with the rack 13, the clutch being held in an inoperative position by the links 8 that are connected by the studs 10 to the clutch, the movable jaw being then susceptible of easy movement along the shank so as to effect the desired adjustment. When such adjustment has been secured, a movement of the hand lever 5 toward the shank 1 will obviously cause the clutch 11 to engage the teeth of the rack 13 to prevent the opening movement of the jaws, while at the same time inward pressure of the hand lever 5 will cause the same to ride upon the roller 17 as a fulcrum and serve to press the movable jaw tightly against the work with which it is engaged.

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

25 1. A wrench, embodying a relatively stationary jaw, a shank connected thereto, a relatively movable jaw mounted on the shank, a hand lever fulcrumed in the movable jaw, a clutch carried by the movable jaw and adapted to engage the shank, said clutch being spring pressed in a forward direction, and a link connection between said clutch and hand lever arranged to carry the clutch into engagement with the shank upon the inward movement of the lever.

2. A wrench, comprising a jaw, a shank connected thereto, a movable jaw mounted on the shank, a hand lever pivotally connected to the movable jaw, a clutch adapted

to engage the shank and having loose connection with the lever, and a spring carried by said lever and adapted to bear against the clutch in a direction to force it into engagement with the shank upon the inward movement of the lever.

3. A wrench, embodying a stationary jaw, a shank connected thereto, a movable jaw mounted on the shank, a hand lever pivotally connected to the movable jaw, a clutch loosely mounted in said movable jaw and having a loose link connection with the hand lever, and adapted to be moved into engagement with the shank upon the inward movement of the lever, and a roller carried by said clutch and adapted to engage the hand lever intermediate of the ends of the latter, as and for the purpose set forth.

4. A wrench, comprising a stationary jaw, a shank connected thereto, a movable jaw mounted on the shank, a hand lever pivotally connected to the movable jaw, a clutch block mounted in the movable jaw and provided with a transversely opening slot, a cross bar mounted in said slot and connected to the movable jaw, an expansion spring connected to the rear end of the clutch block and movable jaw, a slotted link connection between the hand lever and the clutch block, and a spring carried by the hand lever and pressing inwardly upon the clutch block.

In testimony whereof, we affix our signatures in presence of two witnesses.

ROBERT M. HARRIS. [L. S.]
WILLIAM L. BOTTOMS. [L. S.]

Witnesses:

J. F. O'RORKE,
C. C. ENOCHS.