Feb. 27, 1923. 1,446,619

C. R. EDWARDS

WRENCH

Filed May 21, 1920

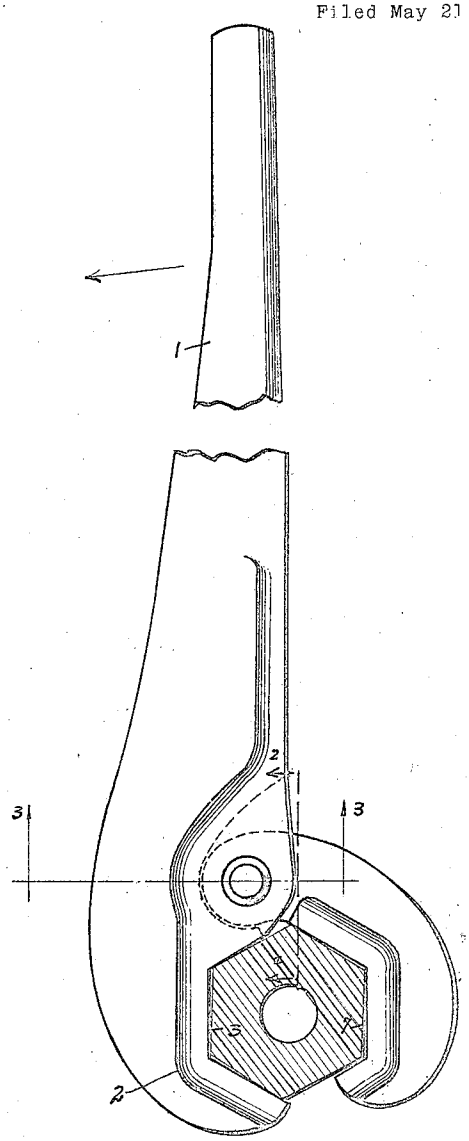



FIG. 1

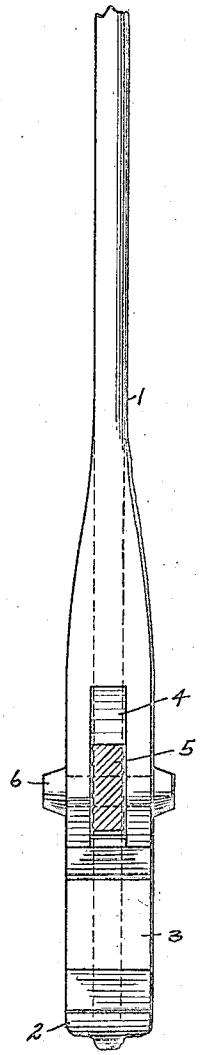



FIG. 2

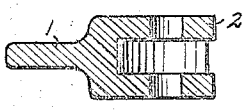



FIG. 3

INVENTOR
Charles R. Edwards,
BY
Hardway & Cattell
ATTORNEYS.

Patented Feb. 27, 1923. 1,446,619

# UNITED STATES PATENT OFFICE.

CHARLES R. EDWARDS, OF HOUSTON, TEXAS.

## WRENCH.

Application filed May 21, 1920. Serial No. 383,081.

*To all whom it may concern:*

Be it known that I, CHARLES R. EDWARDS, citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in a Wrench, of which the following is a specification.

This invention relates to new and useful improvements in a wrench.

One object of the invention is to provide a wrench of the character described, which is specially adapted for use in screwing together and unscrewing the members of a tool joint. In drilling wells by the rotary process, a drill stem is employed which is made up of sections connected by what is commonly known as tool joints. These tool joints are specially constructed so that they may be readily screwed together and unscrewed, in the process of making up, or breaking up a drill stem. This process is well known to those familiar with the art of rotary drilling. The torsional strain to which the drill stem is subjected in drilling causes the members of the tool joints to become very tightly screwed together so that it is often difficult to unscrew them and chain tongs are commonly employed for this purpose, but these often slip or break in operation and the wrench herein described has been specially designed for application to tool joint members formed with hexagonal, or other many sided sections which are provided to receive the wrench.

Another object of the invention is to provide a wrench of the character described which is of simple construction and consequently which may be cheaply and easily manufactured and which is effective in operation, and it is to be observed that, while the wrench has been particularly designed for use in screwing together and unscrewing the members of tool joints it may be applied generally wherever desired.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings wherein, Figure 1 is a side view of the wrench as applied to the work,

Figure 2 is a sectional view taken on the line 2—2 of Figure 1, and

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts in each of the Figures, the numeral 1 refers to the wrench handle, one end of which is formed so as to be readily gripped by the operator and the other end of which is formed into an engaging jaw 2. This jaw has its operative face 3 formed of a contour to fit around one side of a polygonal section. As shown this jaw is formed for application to a hexagonal section. Adjacent the jaw 2 the handle is provided with a recess 4 in which one end of the movable jaw 5 is fitted and a bearing pin 6 is fitted through aligned bearings in the handle and in said movable jaw. The operative face 7 of the movable jaw opposes the operative face 3 of the fixed jaw and is correspondingly notched so as to fit around the other side of the section to be turned. In application the wrench is engaged around the section to be turned and the handle 1 is then moved in the direction indicated by the arrow in Figure 1. When said handle is so moved the wrench jaws 2 and 5 will grip the tool joint member to be turned and will engage against the respective angles thereof, without the liability of slippage or disengagement. The wrench may be readily disengaged from the work by reversing the movement of the handle and then pulling the pivoted jaw 5 backwardly, the socket 4 being somewhat elongated to permit the free movement of said jaw 5.

What I claim is:

A wrench including a handle, one end of which is formed into a fixed jaw, whose operative face is notched to conform to the contour of and fit around one side of a polygonal section said handle having an elongated recess adjacent said jaw, a movable jaw one end of which works in said recess and is pivoted to said handle and whose operative face opposes the operative face of the fixed jaw and is of a contour adapted to fit around the other side of said section, the bearing faces of the jaws bearing against all of the sides of said polygonal section to be turned.

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

CHARLES R. EDWARDS.

Witnesses:
E. V. HARDWAY,
OLA M. SMITH.