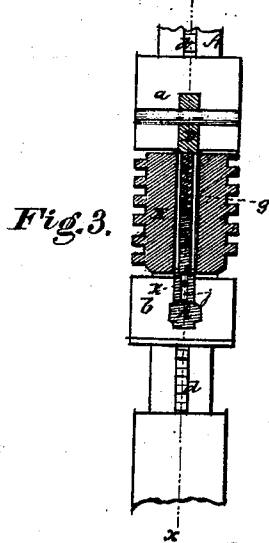
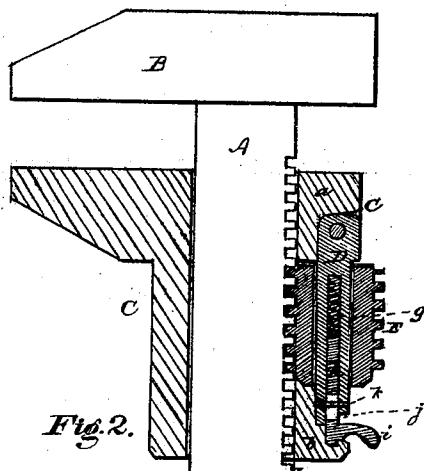
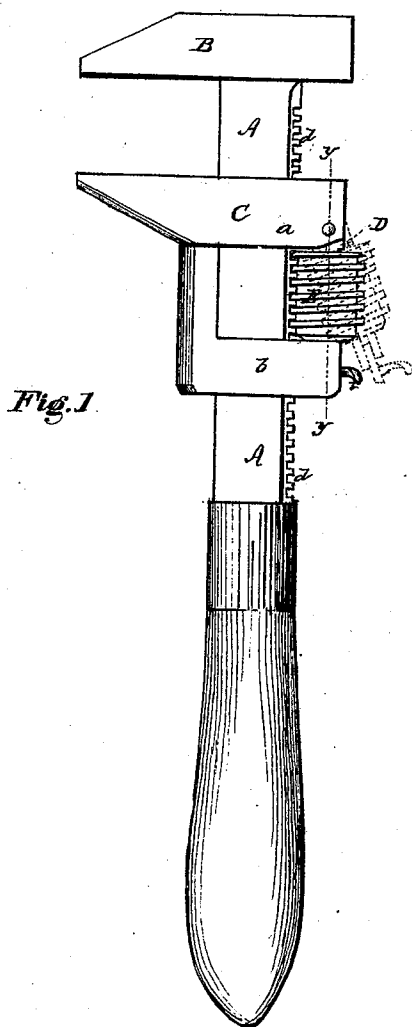


Burruss & Cline,

Wrench.

No. 109,493.

Patented Nov. 22, 1870.



Witnesses:

Phil. S. Dodge  
Wm. H. Hoadway

Inventor:

P. Burruss  
C. Cline  
by Dodge & Munn  
their attys.

# United States Patent Office.

PETER-BURRESS AND CONRAD CLINE, OF BRAIDWOOD, ILLINOIS.

Letters Patent No. 109,493, dated November 22, 1870.

## IMPROVEMENT IN WRENCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, PETER BURRESS and CONRAD CLINE, of Braidwood, in the county of Will and State of Illinois, have invented certain Improvements in Adjustable Wrenches, of which the following is a specification, reference being had to the accompanying drawing.

Our invention relates to that class of adjustable wrenches in which the movable jaw is operated by a thumb-screw attached thereto, and working in a rack on the shank; and

It consists in a novel manner of attaching and locking the screw to the jaw so that the screw can be instantly disengaged from the rack, the jaw slid to any point on the shank, and the screw again engaged in the rack.

Figure 1 is a side view of our improved wrench;

Figure 2, a longitudinal section of the same on the line  $x x$  of fig. 3; and

Figure 3, a section on the line  $y y$  of fig. 1.

A is the shank of our wrench, having the fixed head or jaw B on its end, and a rack,  $d$ , formed the whole length of its back, as shown.

C is the movable jaw, provided with two arms,  $a$  and  $b$ , which clasp around the shank to hold and guide the jaw, which latter is free to slide on the shank.

D is a bar or bolt, having its upper end pivoted in a mortise in arm  $a$  of jaw C, and so arranged that its lower and free end can shut into a recess made for the purpose in the lower arm  $b$  of said jaw.

E is the thumb-screw, which is made with a longitudinal hole through its middle, and slipped onto the pivoted bolt D, so that, when the lower end of the bolt is closed into its seat, the screw engages into rack  $d$ , and, when turned by the fingers, moves the jaw C along on the shank; and so, also, that when the end of the bolt is turned outward the screw is disengaged from the rack, as shown in dotted lines in fig. 1, and the jaw thereby permitted to slide freely and loosely on the shank.

A longitudinal hole is bored into the bolt D, and a spiral spring,  $g$ , and catch-bolt  $h$  inserted therein, the end of the latter projecting beyond the bolt, and being formed with a thumb-piece,  $i$ .

A slot,  $j$ , is made through the catch  $h$ , and a pin,  $k$ , is passed through bolt D and said slot, as shown in figs. 2 and 3, so as to allow a slight movement of the catch, but prevent it from escaping from the bolt.

A notch is made in the lower arm  $b$ , into which the end of catch  $h$  engages when the bolt D is closed, so as to hold the screw in contact with the rack.

To operate the wrench, when a long movement of the jaw is required, the thumb-piece  $i$  is pressed upward so as to disengage the catch  $h$  and release the bolt D, the end of the bolt is turned outward so as to disengage the screw, and then the jaw moved as necessary and the bolt pressed inward until the screw engages in the rack and the catch locks into the notch. The jaw is then tightened by turning the screw in the usual manner.

When the jaw is to be moved only a very small distance, it is not necessary to disconnect the screw, and the jaw is operated by the screw, as usual.

The joint at the upper end of bolt D is so formed that the bolt cannot swing far enough to carry the lower end of the screw beyond the arm  $b$ , which latter serves to hold the screw on the bolt and prevent it from sliding off when the latter is opened.

We also bevel off the edges or corners of the upper threads of the screw, so that they enter readily between the teeth of the rack.

The teeth of the rack are cut only part way into the shank, as shown in fig. 1, so that a solid rib is left on the back of the shank, extending its entire length.

In this manner we produce a cheap, strong, and light wrench, which is capable of very quick and easy change and adjustment.

Having thus described our invention,

What we claim is—

The screw E, bolt D, and catch  $h$  provided with the thumb-piece  $i$ , when constructed and arranged to operate substantially as and for the purpose set forth.

PETER BURRESS.  
CONRAD CLINE.

Witnesses:

PETER CZIZEK,  
ELIJAH PRICE.