(No Model.)

E. W. RIDER.

WRENCH.

No. 477,228. Patented June 21, 1892.

Fig 1

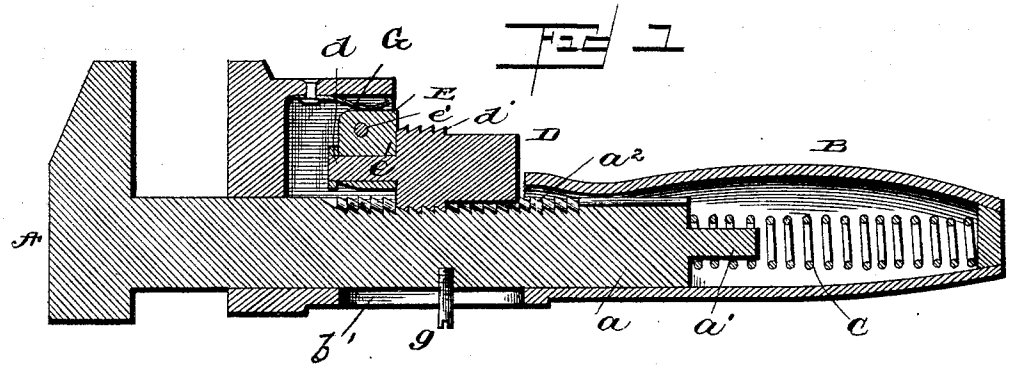


Fig 2

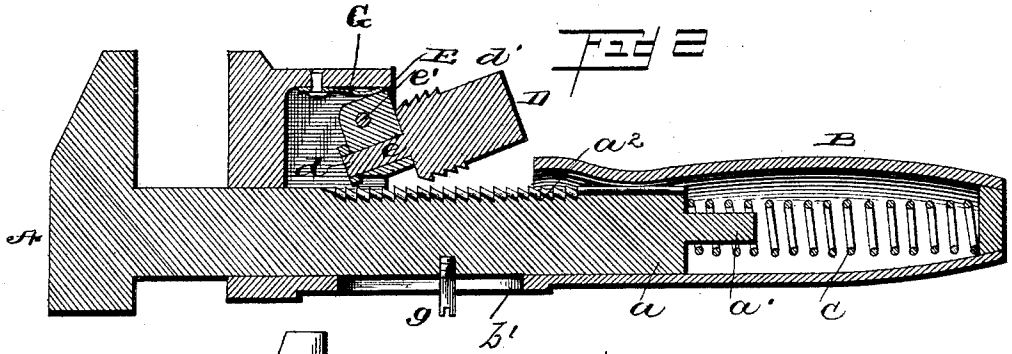


Fig 3

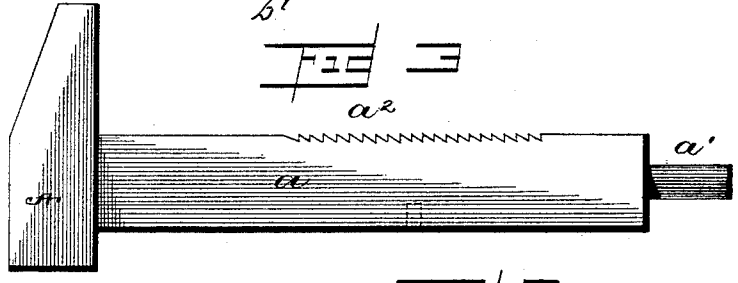


Fig 5

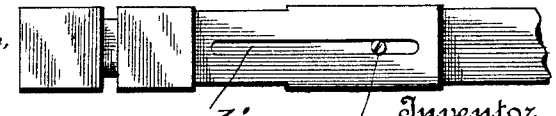
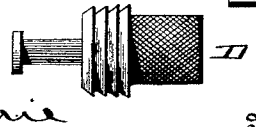


Fig 4



Witnesses

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EBENEZER W. RIDER, OF RACINE, WISCONSIN.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 477,228, dated June 21, 1892.

Application filed September 1, 1891. Serial No. 404,401. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER W. RIDER, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1 represents a side view, partly in section, of wrench opened and ready for closing by shoving outer jaw in to fit the nut. Fig. 2 represents a like view of wrench with screw raised, disengaging thumb-screw with thread on upper side of outer jaw, thus allowing outer jaw to slip out. Fig. 3 is a detail view showing in side elevation the movable jaw having the ratchet or rack on its upper side. Fig. 4 is a detail view of the movable thumb-piece having the rack that also acts as a screw-thread. Fig. 5 is a detail showing a plan view of the under side of the inner jaw, &c.

This invention is designed to work quickly when being adjusted to fit a nut, and also has the screw action to use in case the jaws do not fit tight enough when pushed up to nut by the quick ratchet action; and the novelty consists in the construction and combination of parts of the device by means of which this end is attained, all as will now be more fully set forth and explained, as well as pointed out in the claims, reference being had to the accompanying drawings.

In my device the outer jaw A is movable and slides in and out of the handle B and inner jaw b. The handle and inner jaw are constructed of one piece and hollow to admit the shank or bar a of the outer jaw and also the coiled spring C, as shown in Fig. 1. This coiled spring C is placed inside of the handle, one end resting on the inner side of outer end of same and the other end against the inner end of the shank a of outer jaw or the extension a' of same. This spring is for the purpose of pushing out the outer jaw quickly when the thread or thumb-screw D, Fig. 4, is disengaged from the rack or thread a^2 on upper side of the shank of the outer jaw-bar, as shown in Fig. 2. This rack is preferably slightly concave in cross-section. The small end d of the thumb-screw D passes into the socket or hole e in the block E, which is pivoted inside of the upper front part of the inner jaw at e'. Said socket end is headed on the other side, yet loose enough to be swiveled, so as to be allowed to turn freely in the hole e. As thus combined with the other parts the part D has a double action, one being the turning of the screw either to right or left and the other being to raising and lowering the same. Now when all the parts are together, as shown in Fig. 1, the outer jaw is slid into inner jaw and handle and passes along until the rack or ratchet a^2 on its upper face, as shown in Fig. 3, connects with the screw-threaded ratchet d' on the thumb-screw. The same hold and cause the jaw to be held in and rigid at the point of stopping. Should the jaw need to be moved in farther, it will merely be necessary to push it in, and as the threads on the outer jaw are constructed straight on the outer side and slanting on the inner side—that is, like a rack—as shown in Fig. 3, and the threads on the thumb-screw, Fig. 4, are straight on the opposite direction or side and slanting on the other—that is, like a rack—as shown in Fig. 4, the outer jaw is easily slid in and the coiled spring is pressed together. Should one wish to open the jaws, simply press upon outer end of screw D and the threads will be disengaged, as shown in Fig. 2, and the jaw is instantly thrown out by reaction, the coiled spring C being then ready in an instant to be pushed in to fit nut.

In the inside of the upwardly-extending front end of the portion B and so placed as to press down upon the block E is placed a leaf-spring G. Its office is to so press down this block as to cause the thread on D to come into close contact with the thread a^2 on the upper side of the shank of jaw A.

In the under or back side of the wrench is a slot b', which is for the purpose of putting a lug g through and into the lower edge of the outer jaw-bar. After the outer jaw is shoved into the inner jaw and handle the lug g is passed through the slot b' and screwed into the bar of outer jaw and allowed to extend out about, say, three-eighths of an inch. This answers for two purposes: first, as a stop to prevent the outer jaw from flying out farther than a certain distance, and then,

it be desired, as often is, to tighten the jaws onto the nut, and the quick ratchet action, which is so desirable in a wrench, and both so perfectly combined that either can be worked most perfectly.

What I claim is—

1. The handle B, having the block E pivoted inside the front jaw, and the part D, having ratchet-thread d' and swiveled in said block and adapted to act as a thumb-screw to move the jaw A outward, and the spring G, fixed to handle B to press the part D down, and the movable outer jaw A, having ratchet-oted block E, and the outer jaw A, having the shank a, upon which the said spring acts, and the lug g, fixed to the jaw A and movable in the slot b and acting as a stop and thumb-piece, all combined as set forth, and operating as described.

In testimony whereof I affix my signature in presence of two witnesses.

EBENEZER W. RIDER.

Witnesses:
JNO. W. KNIGHT,
ERASTUS C. PECK.