(No Model.)

W. F. MERCER.

WRENCH.

No. 455,225. Patented June 30, 1891.

Fig. 1.

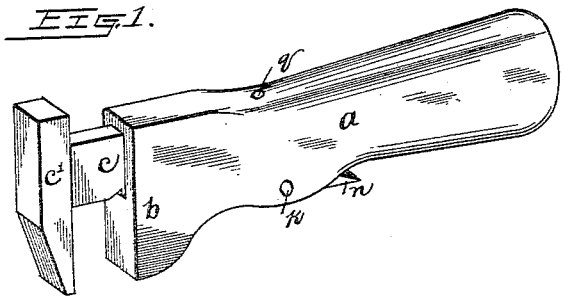


Fig. 2.

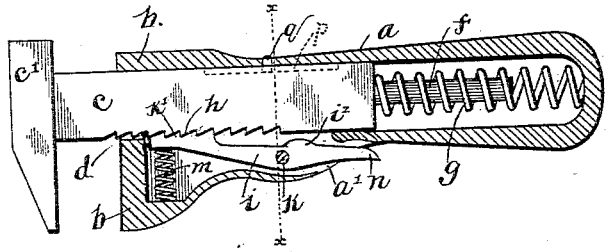
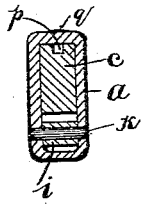


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM F. MERCER, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO JOHN A. PFEIFER, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 455,225, dated June 30, 1891.

Application filed October 8, 1890. Serial No. 367,455. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. MERCER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates to wrenches of that class in which a stationary and movable jaw are employed, said movable jaw being actuated by spring-power and normally held in engagement with the stationary jaw.

The objects of my invention are to provide an automatic wrench of this class which shall be simple in its construction and operation, to provide an integral wrench-handle and stationary jaw, to provide an integral locking-pawl and trigger, to provide means for supporting the sliding jaw-bar in such position within the stationary jaw or handle as to prevent the teeth of said jaw-bar from coming into contact with the stationary jaw, to combine with said wrench means for limiting the movement of the sliding jaw-bar, and to construct my improved wrench in a neat form and of comparatively few parts. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective of my improved wrench with the sliding jaw-bar partly withdrawn from the handle. Fig. 2 is a central vertical longitudinal section of the same, and Fig. 3 is a transverse section on line $x\,x$ of Fig. 2.

Similar letters refer to similar parts throughout the several views.

a represents the wrench-handle, which is provided, as shown, with a hollow interior. This handle-piece has its forward end portion slightly enlarged, as shown, to form a stationary jaw b, the outer end of said jaw being solid, with the exception of an opening d in the upper portion thereof, which communicates with the hollow interior of the handle.

c represents the sliding jaw-bar, which has formed in its outer or forward end the outer jaw c' of the wrench. This sliding jaw-bar enters the handle a through the jaw-opening d and is movably supported therein. The inner or rear end of the sliding jaw-bar c is provided with an extension in the form of a pin f. The combined length of the extension-pin f and the jaw-bar c is such that when the jaws c' and b are in contact with each other the rear end of said pin is in close proximity to the rear end of the handle-hollow. Loosely surrounding the jaw-extension pin f is a coiled spring g, one end of which bears against the inner surface of the rear end of the handle and the forward end of which bears against the rear end of the jaw-bar body. The central portion of the jaw-bar c is provided with transverse forwardly-inclined teeth or notches h.

i represents a locking pawl or latch, which is journaled slightly in rear of the center of its length upon a transverse pin k, which extends between the sides of the handle-piece at a point beneath the sliding bar c and in close proximity to the under side of the handle-piece. This pawl i has its forward end terminating within the jaw b in close proximity to the forward end of the latter, and has formed on the upper side of its forward end portion a short row of rearwardly-inclined teeth k', which are normally held in engagement with the teeth h of the sliding bar c by the upward pressure of a short vertical coiled spring m, which bears between the under side of the toothed pawl-head and the inner surface of the jaw b. The rear end portion of the pawl i projects, as shown, in the form of a trigger n through a slotted opening a', formed in the under side of the handle-piece.

i' represents a lug or enlargement, which is formed with the pawl on the upper side thereof and in rear of the pawl pivot-point.

Formed in the upper surface of the sliding bar c, between the rear end and the center of the length thereof, is a longitudinal groove or way p, into which projects the lower end of a short vertical pin or key q, which is driven through the upper side of the frame-piece.

From the construction shown and described it will be seen that the tension of the coiled spring m will operate to hold the teeth of the pawl-head in engagement with the teeth of the sliding bar, and that said pawl will thus operate to lock the sliding bar in the desired

position. It being desired to increase the distance between the wrench-jaws, the lower or projecting trigger end n of the pawl i is pressed upward until the said pawl i is released from engagement with the sliding bar, when the tension of the bar-spring g will operate to drive outward the sliding bar. The outward movement of the sliding bar will be limited by the contact of the pin q and the shoulder at the end of the bar-groove p. As the rear end of the pawl is elevated, it will be observed that the pawl-lug i^2 is made to bear against the under side of the sliding bar, and thus retain said bar at such elevation during its sliding movement as will prevent any injurious contact of the bar-teeth and the metal of the stationary jaw at the base of the opening d.

I am aware that wrenches have been formed heretofore in which a spring-actuated jaw has been locked by a toothed pawl and that said pawls have been operated by a trigger; but it will be observed that in the herein-described pawl are combined both a trigger and bearing for the sliding bar and that said trigger and bar are formed integral with said pawl.

It will be observed that the parts contained in my device are few and that their connections and operation are simple and positive.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wrench, the combination, with the hollow handle and rear stationary jaw formed therewith, of a spring-actuated sliding jaw-bar supported within said handle, the groove p, formed in said sliding bar, and a rigid stop-pin q, projecting within said groove, substantially as described.

2. In a wrench, the combination, with a hollow handle-piece and stationary jaw formed therewith, of a sliding jaw-bar c, actuated by a spring, as described, teeth h on said bar, pivoted pawl i, the toothed head of which is normally held in engagement with the bar-teeth h by a coiled spring, as described, a bar-bearing lug i', and an outer projecting trigger n, formed integral with said pawl, substantially as described.

WILLIAM F. MERCER.

In presence of—
BARTON GRIFFITH,
C. C. SHEPHERD.