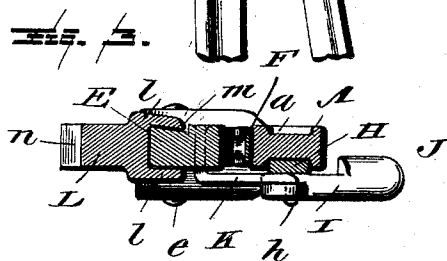
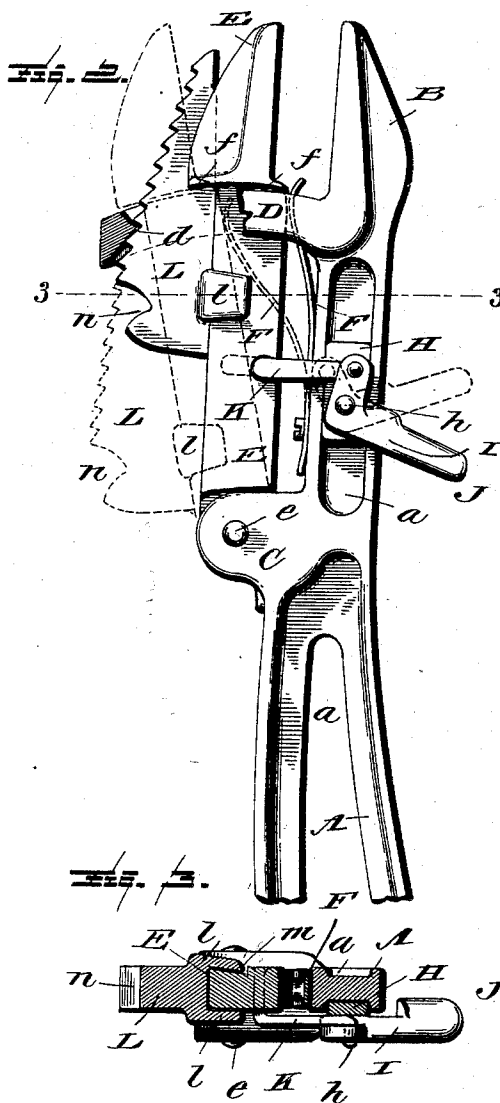
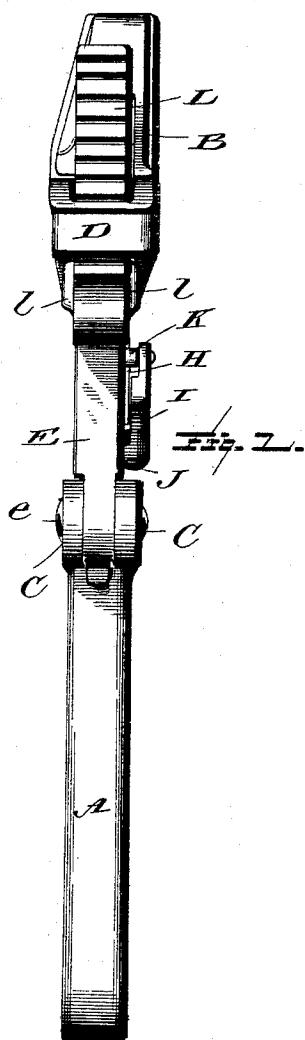


(No Model.)

L. I. FOLK, J. W. NAIRN & L. H. DEMPSEY.
WRENCH.

No. 483,803.

Patented Oct. 4, 1892.



Witnesses
L. C. Mills.
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UNITED STATES PATENT OFFICE.

LAWRENCE I. FOLK, JOHN W. NAIRN, AND LOUIS H. DEMPSEY, OF DUBUQUE,
IOWA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 483,803, dated October 4, 1892.

Application filed May 28, 1892. Serial No. 434,719. (No model.)

To all whom it may concern:

Be it known that we, LAWRENCE I. FOLK, JOHN W. NAIRN, and LOUIS H. DEMPSEY, citizens of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Ratchet-Wrenches; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in wrenches; and it has for its objects, among others, to provide an improved ratchet-wrench which can be readily adjusted and which shall be firmly held in its adjusted positions. We provide a wrench of few parts and those arranged in such a manner as to insure most satisfactory results. The movable jaw is acted upon by a spring to force it outward away from the fixed jaw, and it is moved toward the fixed jaw by a wedge acting in opposition to the said spring. A trigger and connections are provided for moving the movable jaw against its spring and permitting the wedge to act to hold the said jaw as adjusted. The said wedge is arranged to act by gravity, being free to slide in both directions, the wrench being inverted to insure its moving in the one direction and held in the opposite manner to insure its moving in the other direction.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is an edge view of our improved wrench. Fig. 2 is a side elevation thereof with portions broken away. Fig. 3 is a cross-section on the line 3 3 of Fig. 2, looking down.

Like letters of reference indicate like parts throughout the several views in which they occur.

Referring now to the details of the drawings by letter, A designates the handle or shank, which is formed with the fixed jaw B, the ears

C, between which the movable jaw is designed to be pivoted, and with the curved yoke D or loop, which is designed to embrace the movable jaw and form a guide therefor in its movements, as will be readily seen from Figs. 1 and 2. The movable jaw E is pivoted on a suitable pivot *e*, held in the ears C and upon which it has movement. It is arranged to move between the parallel portions of the yoke, as seen in Fig. 1, and beyond the yoke it is formed with shoulders *f*, as seen best in Fig. 2, to further guide it in its movements.

F is a stiff flat spring arranged between the shanks of the jaws, being attached to that of the fixed jaw and acting at its other end upon the movable jaw, serving to normally keep the jaws separated. The handle and fixed jaw-shank are provided with hollowed-out portions, as *a*, for lightness, and in the hollow of the shank of the fixed jaw is secured a block H, to which is pivoted at its elbow upon a pivot *h* the elbow-lever I, one arm of which is extended substantially laterally to form a handle or trigger J, as seen in Figs. 2 and 3, and to the other end or the end of the short arm of the lever is pivotally attached one end of the rod or link or arm K, the other end of which is secured to the movable jaw at a point between its pivot and the yoke, as seen best in Fig. 2.

The cross-bar of the yoke is formed upon its inner face into a tooth or pawl *d*, as seen best in Fig. 2, to engage the teeth of the toothed wedge L, which has a flat face bearing against the outer face of the movable jaw, as shown, and is confined between the same and the cross-bar of the yoke, as seen in Fig. 2. This wedge is provided with lugs *l*, which loosely embrace the movable jaw, as seen in Figs. 2 and 3, and which serve to prevent lateral displacement of the wedge, the movable jaw upon the face adjacent to the wedge being beveled or dovetailed, as seen at *m* in Fig. 3. The lower end of the wedge is constructed to form a thumb or finger piece or hold *n*, by which it may be more easily manipulated.

The operation will be readily understood. The jaws are normally held separated by the action of the spring. When it is desired to adjust the jaws either closer together or farther apart, all that is necessary to do is to

press on the trigger, which will bring the jaws together, when the wedge may be caused to slide in the desired direction by holding the wrench either up or down, according to the direction which it is desired that the wedge shall take, and when the jaws are in the desired position let go the trigger and the jaws will be firmly held in their adjusted position by the wedge, the proper tooth of which is engaged by the tooth or pawl of the cross-bar of the yoke, as seen in Fig. 2.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

15 What we claim as new is—

The wrench described, consisting of the handle with fixed jaw, ears and yoke formed with toothed cross-bar, the movable jaw pivoted

between said ears and formed with shoulder *f*, the spring between the jaws, the elbow-lever pivoted on the fixed jaw, the link connecting the lever with the movable jaw, and the sliding wedge having lugs to embrace the movable jaw and toothed to engage the tooth of the yoke and arranged within the yoke and formed with thumb-piece *n*, all substantially as and for the purpose specified. 20 25

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

LAWRENCE I. FOLK.

JOHN W. NAIRN.

LOUIS H. DEMPSEY.

Witnesses:

JAMES McDONALD,

C. GANTENBEIN, Jr.