

(No Model.)

G. E. FRANKLIN.

WRENCH.

No. 395,431.

Patented Jan. 1, 1889.

Fig. 1.

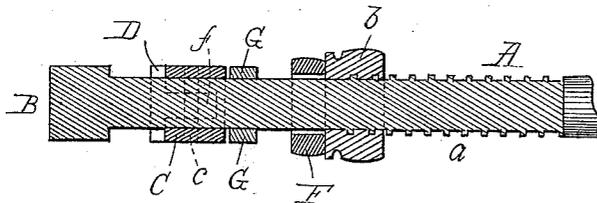
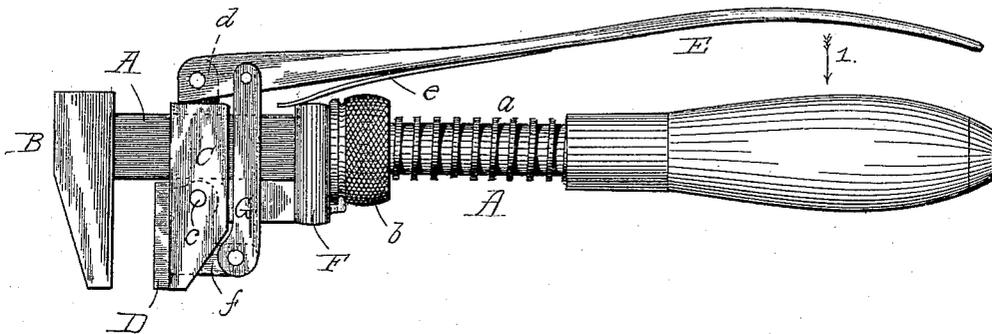


Fig. 2.

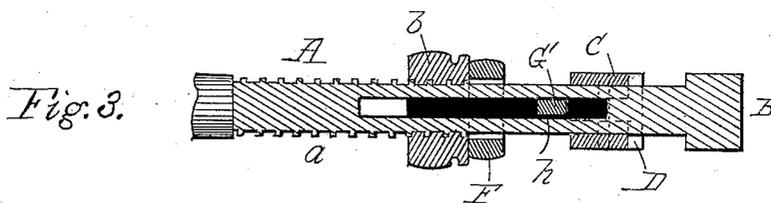


Fig. 3.

Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE E. FRANKLIN, OF NATICK, MASSACHUSETTS.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 395,431, dated January 1, 1889.

Application filed April 23, 1888. Serial No. 271,592. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. FRANKLIN, a citizen of the United States, residing at Natick, in the county of Middlesex and State of Massachusetts, 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to wrenches, particularly that class termed "monkey-wrenches;" and it consists in a compound-lever attachment by which a gripping-plate pivotally affixed upon the movable jaw is to be actuated and pressed more firmly against the object to be grasped.

The drawings accompanying this specification represent, in Figure 1, a side elevation of a wrench embodying my invention. Fig. 2 is a horizontal section longitudinally of the shank of the wrench. Fig. 3 is a similar section showing a modification in construction.

In the present instance, A represents the shank of an ordinary "monkey-wrench," so called, screw-threaded at *a*.

B is the fixed head, and C the movable jaw provided with an actuating sleeve-nut, *b*, which engages the screw-thread *a*.

In all wrenches provided with the adjusting nut and screw it has been found that a certain spring or yielding exists between said jaw and the object grasped, due to the lost motion among the several parts, and this prevents a proper grip upon the nut or other article to be operated upon. To obviate this defect I have pivoted a gripping-plate, D, at *c*, to the movable jaw, and this plate serves as the active part of said jaw.

To actuate the plate D at proper times, when the wrench is to be used, I have cast or otherwise provided a boss, *d*, upon the upper part of the movable jaw C and pivoted thereto a lever, E, which is spring-actuated at *e*. The free end of the latter rests upon the strap F, which girdles the handle A and forms the rear

portion of the movable jaw. Thus as the latter is adjusted toward or away from the fixed jaw but little friction ensues and the parts are free to move. Moreover, to provide a powerful leverage and thus hold the gripping-plate D to force it against the object grasped, I have pivoted said plate upon the jaw C at a point adjacent to the shank A, while to the free end of said plate and projecting rearwardly therefrom is formed the arm *f*. Two connecting-links, G G, unite the latter with the actuating-lever E. It will thus be seen that it is the outer end of the plate D which receives the full benefit and force of the leverage effected by the lever E and its connecting parts, and, as it is this portion of the jaws which usually fails to properly grasp the article, the purpose of my invention is fully disclosed.

One advantage in this attachment is that the tool may be used as a simple wrench without employing the operating back-lever E. In the employment of the gripping-plate the movable jaw is adjusted, by means of the nut *b* and screw *a*, as closely as possible about the object to be operated upon. The operator grasps the handle A and lever E, and as he draws the tool toward him in direction of arrow 1 the force thus employed operates to close the lever down upon the handle A. This movement of the lever advances the outer or free end of the plate D toward the fixed jaw with an increased force proportional to the arrangement of the lever system, and thus the tendency of the jaws of the wrench to separate or spring apart is effectually counteracted.

A further advantage is to be observed in that the lever attachment is simple and inexpensive and can easily be applied to any wrench. In the present instance the active face of the gripping-plate is shown as smooth, to be used in setting up nuts; but in lieu thereof a roughened or serrated plate may be substituted, in which event the tool can be employed for piping purposes.

In Fig. 3 I have shown a modification in the construction of the links G G, which connect the outer free end of the gripping-plate with its actuating-lever. Thus in lieu of two links disposed exteriorly and laterally of the shank A of the wrench said shank is slotted at *h*, and

but one link  $G'$  is then employed to unite the arm  $f$  of the gripping-plate with the lever  $E$ .  
I claim—

1. In a wrench provided with a fixed jaw, 5 the movable jaw  $C$ , to which is pivoted a gripping-plate,  $D$ , furnished with the arm  $f$ , in combination with a spring-lever,  $E$ , disposed upon the back of said wrench and pivoted to the movable jaw, and the connecting-links  $G$  10  $G$ , which unite said plate and lever, all operating substantially as and for purposes described.

2. In a wrench, the combination, with the fixed jaw and a movable jaw screw-actuated, of

a gripping-plate pivoted to and carried by said 15 movable jaw, and the compound lever system which actuates said gripping-plate, composed of the pivots  $c d$  in the movable jaw, the operating-lever  $E$ , lever-arm  $f$ , and a link or links,  $G$ , uniting said arm and lever, substantially 20 as herein specified.

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

GEORGE E. FRANKLIN.

Witnesses:

H. E. LODGE,

E. K. BOYNTON.