(No Model.)

L. H. BARNES.

WRENCH.

No. 572,857. Patented Dec. 8, 1896.

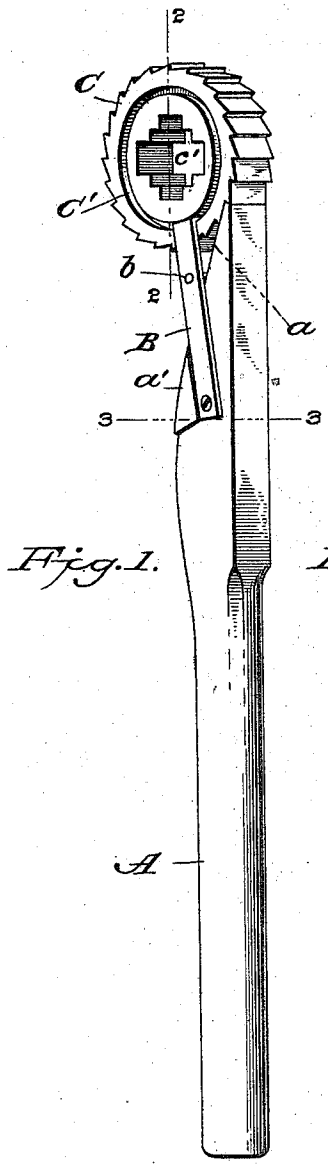

Fig. 1.

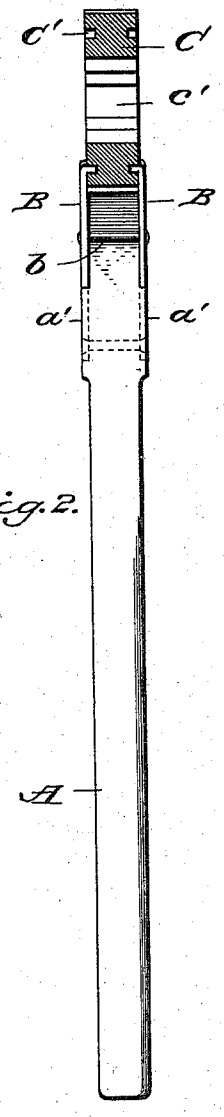

Fig. 2.

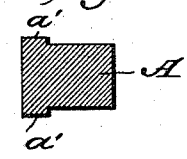

Fig. 3.

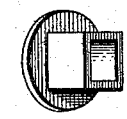

Fig. 4.

WITNESSES

L. S. Elliott.

C. M. Johnson

Luther H. Barnes

INVENTOR

by

Attorney

UNITED STATES PATENT OFFICE.

LUTHER H. BARNES, OF NEMAHA CITY, NEBRASKA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 572,857, dated December 8, 1896.

Application filed January 9, 1896. Serial No. 574,923. (No model.)

To all whom it may concern:

Be it known that I, LUTHER H. BARNES, a citizen of the United States of America, residing at Nemaha City, in the county of Nemaha and State of Nebraska, 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 of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a simple and effective wrench for turning nuts, screw-taps, and the like; and it consists in the combination of a ratchet-wheel having a central opening to receive the nut and an annular groove on each side, a handle reduced at one end to form a fixed pawl for engagement with the teeth of the wheel, and plates pivoted to the handle and provided with inwardly-bent ends which engage the annular grooves, the movement of the plates being limited by a cross-bar and shoulders formed on the handle, all as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a wrench constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of a reducer which is adapted to be placed in the opening for the nut to provide a smaller opening.

A designates the handle of the wrench, which is made up of a bar of metal reduced at one end to provide an inclined edge *a*, which terminates in a point or fixed pawl. Each side of this handle is formed with a shoulder *a'*, and adjacent to these shoulders are pivoted plates B, connected to each other beyond the inclined edge *a* of the handle by means of a cross-bar *b*, said cross-bar limiting the swinging movement of the plates in one direction. The outer ends of the plates B are bent inward for the purpose hereinafter set forth.

C designates a ratchet wheel or disk which is provided centrally with a nut-receiving opening *c'* of suitable configuration, and on each side of said disk is an annular recess or groove C', with which engage the bent ends of the plates B, carried by the handle. The width of the annular recesses is slightly greater than the thickness of the ends of the plates, so that when the longitudinal center of said plates is practically on a line with the axis of the ratchet-disk said disk can turn freely, but when the longitudinal center of the plates is to one side of the axis of the disk the bent ends of said plates will impinge against the walls of the annular recesses and bite or clamp against the same to prevent the ratchet-wheel turning. This construction is an essential novel feature in the improvement in wrenches of this type. The movement of the plates is limited in one direction by the cross-bar *b*, as hereinbefore mentioned, and the opposite movement is limited by the shoulders *a'* on the handle.

In connection with the wrench constructed in accordance with my invention I may use a reducer, (shown in Fig. 4,) which is adapted to fit within the central opening of the ratchet-wheel, said reducer being used for manipulating nuts which are smaller than the openings in the ratchet-wheel.

In use it will be found that the plates which connect the ratchet-wheel to the handle will prevent the ratchet-wheel swinging away to any great extent, the movement being only sufficient to allow the end or pawl to move into and out of engagement with the teeth. When the cross-bar engages the inclined edge *a* of the handle, the bent ends of the plates will bite against the sides of the annular recesses, the movement tightening the ratchet-wheel on the nut, and the end of the handle is then brought in engagement with the next tooth and the nut tightened. When this is being done, there is a direct pull upon the plates and a pushing movement on the pawl, which causes the ratchet-wheel to turn.

I am aware that prior to my invention it has been proposed to construct nut-wrenches comprising a ratchet-wheel having a nut-receiving opening or socket and annular recesses, the handle-bar being of such construction as to provide lugs for engagement with the annular recesses, said handle-bar carrying a shoe or pawl that engages the ratchet-wheel,

and I therefore do not claim such as my invention; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a wrench, the combination, of a handle-bar having one end reduced to form a pawl, plates pivoted to the handle-bar and provided with inwardly-bent ends, means for limiting the swinging movement of the plates upon the handle-bar; together with a ratchet-wheel having a central opening or socket and intermediate annular recesses with which the bent ends of the pivoted plates engage, substantially as shown and for the purpose set forth.

2. The combination in a wrench, of a handle-bar A having a reduced end to form a pawl, a shoulder *a'* formed on each side of the handle-bar, plates B B pivoted to the handle adjacent to said shoulders and provided with inwardly-bent ends, and a cross-bar *b* connecting the plates to each other beyond the edge of the handle; together with a ratchet-wheel C having a central nut-receiving opening and an intermediate annular recess on each side, the bent ends of the plates B being in engagement with said annular recesses, substantially as shown and for the purpose set forth.

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

LUTHER H. BARNES.

Witnesses:
EM. ANEY,
H. W. MUSTERS.