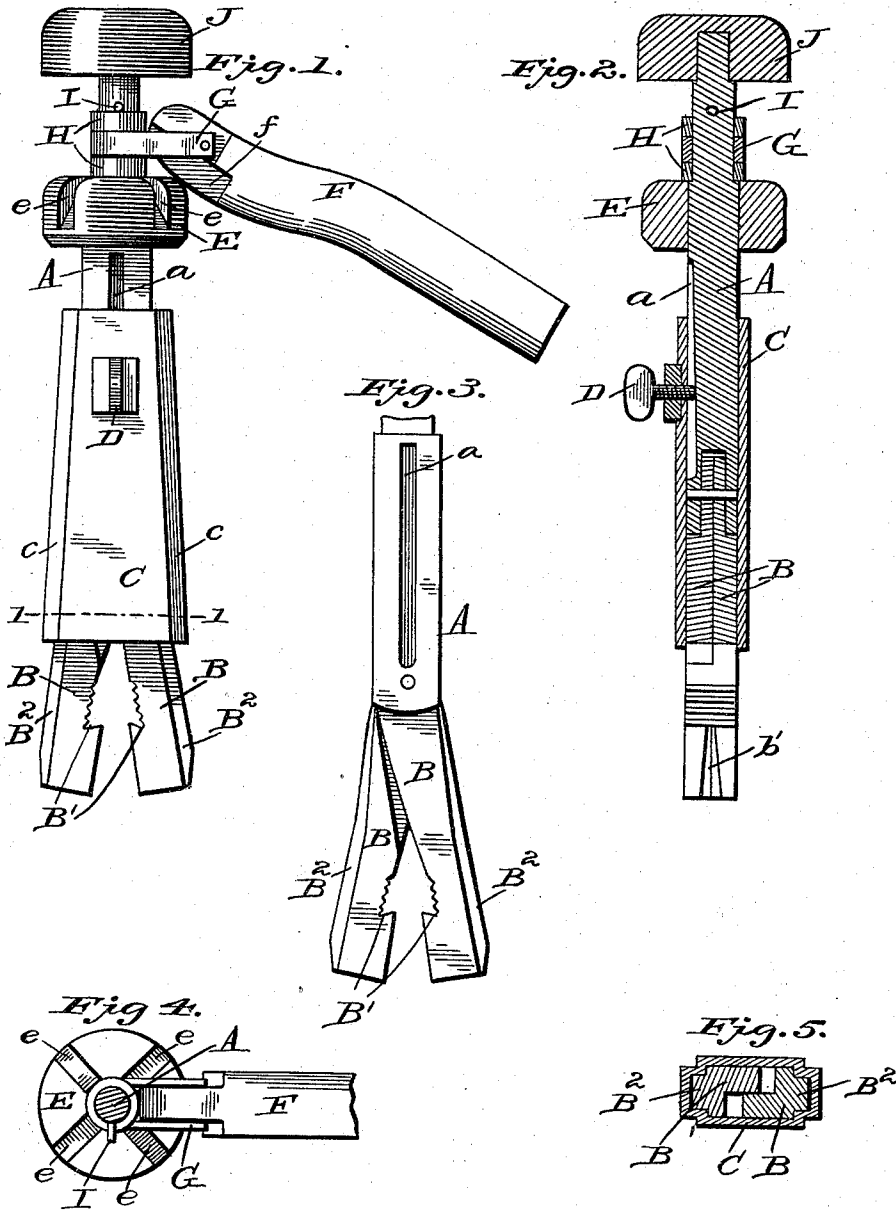


(No Model.)

J. M. FLOWER.
WRENCH.

No. 567,588.

Patented Sept. 15, 1896.



Witnesses
Edmund G. Knicker
K. A. Nau,

Inventor
James M. Flower
By John Hedderburn
his Attorney.

UNITED STATES PATENT OFFICE.

JAMES M. FLOWER, OF POTTS'S STATION, ARKANSAS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 567,588, dated September 15, 1896.

Application filed March 7, 1896. Serial No. 582,204. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. FLOWER, a citizen of the United States, residing at Potts's Station, in the county of Pope and State of Arkansas, 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.

This invention relates to certain new and useful improvements in adjustable reversible ratchet-wrenches, and has for its objects, among others, to provide a simple, cheap, and durable wrench. The jaws are hinged at one end to a slotted shaft or post and are held together by means of a sliding cage or sleeve which slides upon said shaft or post and is held in its adjusted position by a set-screw engaging a slot in the shaft or post. The slot in the post or shaft is cut deeper at its lower end than at its upper end, thus making it impossible for the wrench to let go or slip off from a nut when clamped to it. It can be made adjustable to any size nut and is operated by means of a lever or handle mounted upon the end of the shaft or post and engaging a notched wheel fast upon said shaft. The jaws are notched to adapt it for use as a pipe-wrench.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

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 a perspective view of my improved wrench. Fig. 2 is a longitudinal section through the same. Fig. 3 is a detail of the jaws and their post. Fig. 4 is a cross-section through the shaft near the top of the notched wheel or ring. Fig. 5 is a cross-section on the line 1 1 of Fig. 1.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a shaft or post, having upon one side the longitudinal slot *a*, which is deeper at its lower end than at its upper end, as shown. To the lower end of

this post are hinged or pivoted the jaws B, the adjacent faces of which are halved out, as shown, and their outer ends formed each with a substantially V-shaped notch *b'*, adapting it for use in connection with a nut. These jaws are formed also with the notches B', which adapt the wrench for use as a pipe-wrench. The opposite edges of the jaws are formed with the ribs or flanges B², which are engaged by the correspondingly-shaped grooves or ways *c* in the case or cage C, which is made tapered, as are also the jaws, and the case is adapted to slide upon the post and down upon the jaws, as shown, to hold them closed. The case or cage is held in its adjusted position by means of a thumb-screw D, held therein and adapted to engage in the longitudinal slot or groove *a* of the post.

Upon the post near the upper end is keyed or fastened the ring or circular part E, having in its upper face a plurality of slots or notches *e*, which extend from the top outward and downward, and mounted upon the said shaft above this notched ring is the operating handle or lever F, the lower face of which, near its connection with the shaft, is formed with a portion *f* to fit into the notches of the ring. The said handle or lever is connected with the shaft by means of the yoke or looped metallic strip G, the ends of which are pivoted in recesses in the end of the handle or lever, while the loop portion receives the shaft and is confined between the two axles H and H surrounding said shaft, being prevented from endwise movement by means of a pin or stop I held in the shaft. Upon the outer end of the shaft is a knob J, which serves as a grasp for the hand in operating the wrench.

With the parts constructed and arranged substantially as above described the operation will be readily understood, especially when taken in connection with the annexed drawings, and further detail description thereof is not necessary.

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

What I claim as new is—

1. The combination with the shaft and the jaws hinged thereto and made tapering, of a case or cage adapted to slide upon said post and to tighten the jaws, and a set-screw held

in the case or cage and engaging the post to hold the cage or case in its adjusted position, substantially as shown and described.

2. The combination with the post having a longitudinal slot deeper at one end than at the other, jaws hinged to said post and having ribs upon their outer faces, a cage or case adapted to slide upon said post and having grooves to engage said ribs, and a set-screw carried by the case to engage in the slot or groove of the post, substantially as shown and described.

3. The combination with the post, the hinged jaws and the case sliding on the post to tighten the jaws, of a notched ring fast on the post and an operating-lever pivotally mounted to swivel on the post and having a portion to engage the notches of the ring, substantially as shown and described.

4. The combination with the post, the hinged jaws and the case sliding on the post to tighten the jaws, of a notched ring fast on the post

and an operating-lever pivotally mounted to swivel on the post and having a portion to engage the notches of the ring and a knob on the outer end of the shaft, substantially as shown and described.

5. The wrench described, comprising a shaft having longitudinal slots, jaws hinged to one end of said shaft, a tapered case sliding on the shaft and carrying a set-screw, a notched ring fast on the shaft, a knob on the outer end of the shaft, and a lever pivotally mounted to swivel on the shaft and having a portion to engage the notches of the ring, substantially as shown and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES M. FLOWER.

Witnesses:

R. B. HENRY,

C. G. WILLIAMSON.