(No Model.)

A. E. UPTON.

PIPE WRENCH.

No. 499,765. Patented June 20, 1893.

FIG. 1.

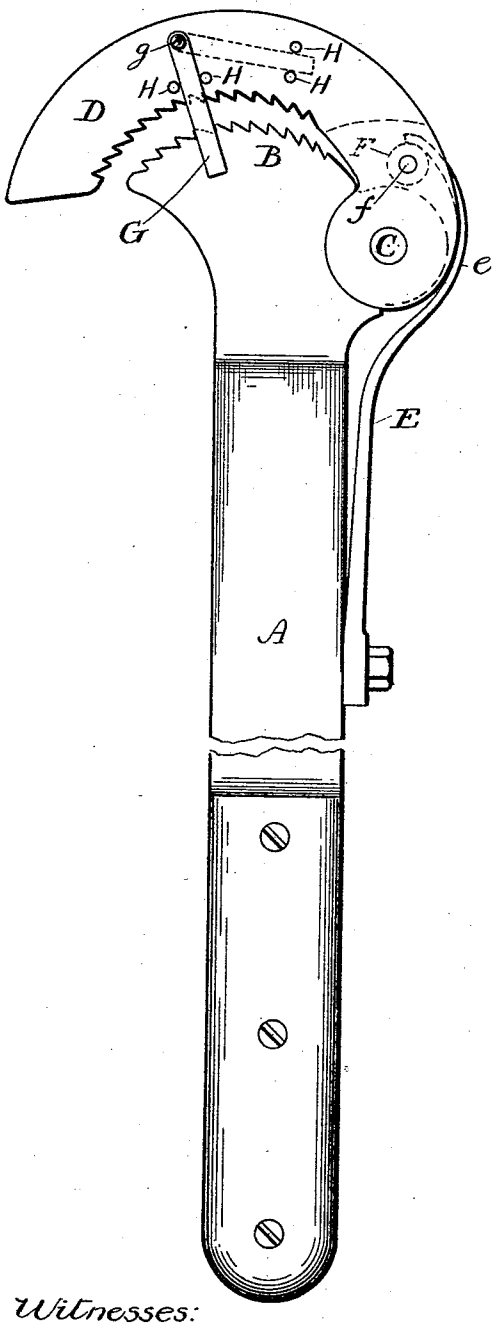
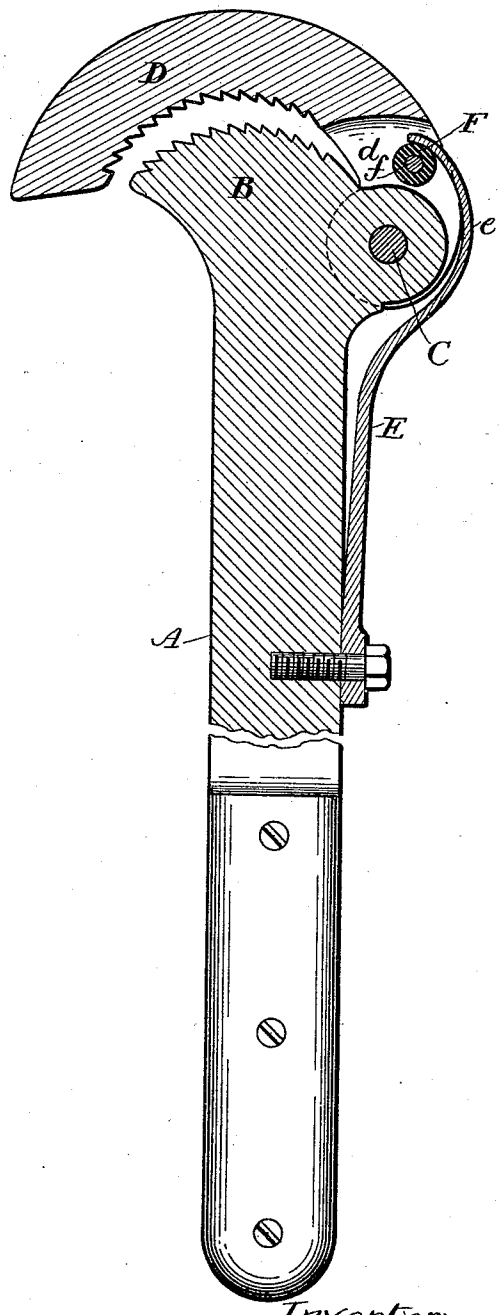


FIG. 2.



Witnesses:
J. Halpenny.
J. D. Crowe

Inventor:
Arthur E. Upton,
By his attorneys
Bradley & Hopkins

UNITED STATES PATENT OFFICE.

ARTHUR E. UPTON, OF GOEHNER, NEBRASKA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 499,765, dated June 20, 1893.

Application filed November 12, 1892. Serial No. 451,825. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. UPTON, a citizen of the United States, residing at Goehner, in the county of Seward and State of Nebraska, have invented certain new and useful Improvement in Pipe-Wrenches, of which the following is a specification.

In the accompanying drawings, which are made a part hereof,—Figure 1, is a side elevation of a wrench embodying the invention, and Fig. 2, is a section thereof.

A represents a lever handle carrying at one end the fixed jaw B of the wrench. To one end of this fixed jaw is connected, by a pivot pin C, the movable jaw D. Patent No. 470,042, issued March 1, 1892, to F. L. George, shows a wrench having jaws similar to the jaws of my improved wrench, and said patent shows also a spring bearing against the cam-shaped hub of the movable jaw and adapted to engage a stop wall on said jaw, the object of said spring, as stated in the patent, being "to prevent the loose swinging movements of the jaw and also to limit the opening movement thereof."

My improved wrench is provided with a spring (shown at E) but it is for an entirely different purpose. The object of the spring, in my wrench, is to give the movable jaw a constant tendency to close, or approach the fixed jaw, and to this end, I cause the spring to exert its force against the movable jaw in a line that is forward of the pivot. In order to reduce the friction, I cause the spring to exert its force through the medium of an anti-friction roller F, mounted upon a pin *f*, which has its bearings in the movable jaw, the jaw being recessed at *d* to receive the roller and also the end of the spring.

It has heretofore been proposed to cause a spring to bear directly against the back of the jaw for closing it, but in practice it is found that with such an arrangement the spring is deflected beyond its limit of elasticity, and thereby its efficiency is destroyed. In order to obviate this, I curve the spring *e* (where it bears against the jaw) and I so locate this curved part that it is only slightly eccentric with relation to the center of motion of the jaw, and I provide the jaw with the recess into which the end of the spring enters. With this arrangement, the amount of deflection may be reduced to a minimum.

Another object of the present invention, is to provide wrenches having the general characteristics of the one above described, with means for preventing small pipes, rods, or other objects from entering between the jaws too far. To this end, I secure to one of the jaws a stop that crosses the space between the jaws. This stop may consist of a spring bar or plate G, pivoted at *g*, and any desired number of studs or small protuberances H for restraining its movement and holding it either in operative position, as shown by full lines, or out of operative position, as indicated by dotted lines. In order to move the stop past either of the studs, it is lifted from contact with the jaw.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination with a fixed and a movable jaw, of a spring having a portion that is eccentric with relation to the pivot of the movable jaw, and an anti-friction roller carried by the movable jaw and having contact with the eccentric portion of the spring, so that as the jaw moves the point of contact with the spring shifts, making the angular movement of the spring less than the angular movement of the anti-friction roller, substantially as set forth.

2. The combination with a fixed jaw and a movable jaw, of an anti-friction roller journaled to said movable jaw at a point forward of its pivot, and a spring engaging said roller, the portion of the spring that engages said roller being curved and eccentric with relation to the pivot of the jaw, said jaw being recessed to receive said roller and the end of the spring, substantially as set forth.

3. In a wrench, the combination with a pair of jaws, of a stop consisting of plate pivoted to one of said jaws and movable independently of the other, so as not to restrain the movement of the pivoted jaw, said plate being adapted to project across the opening between them, and a stud projecting from one of said jaws and engaging said plate for preventing its inward movement, substantially as set forth.

ARTHUR E. UPTON.

Witnesses:
L. CHADWICK,
B. OVERHOLTS.