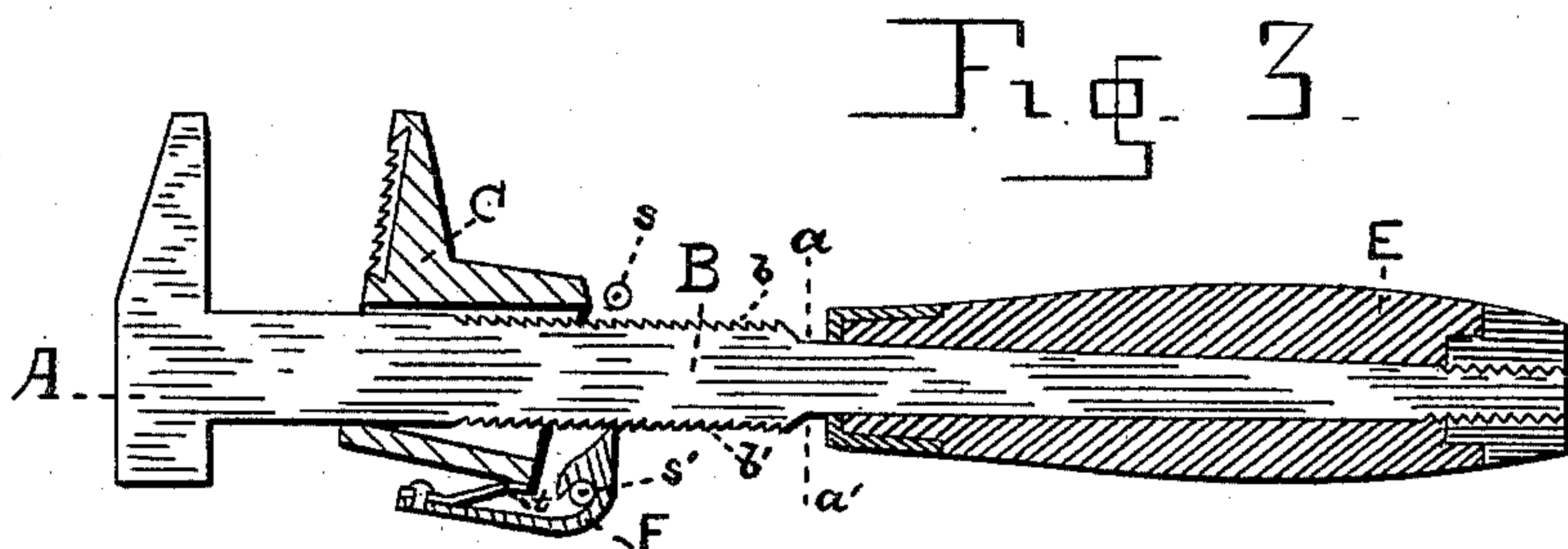
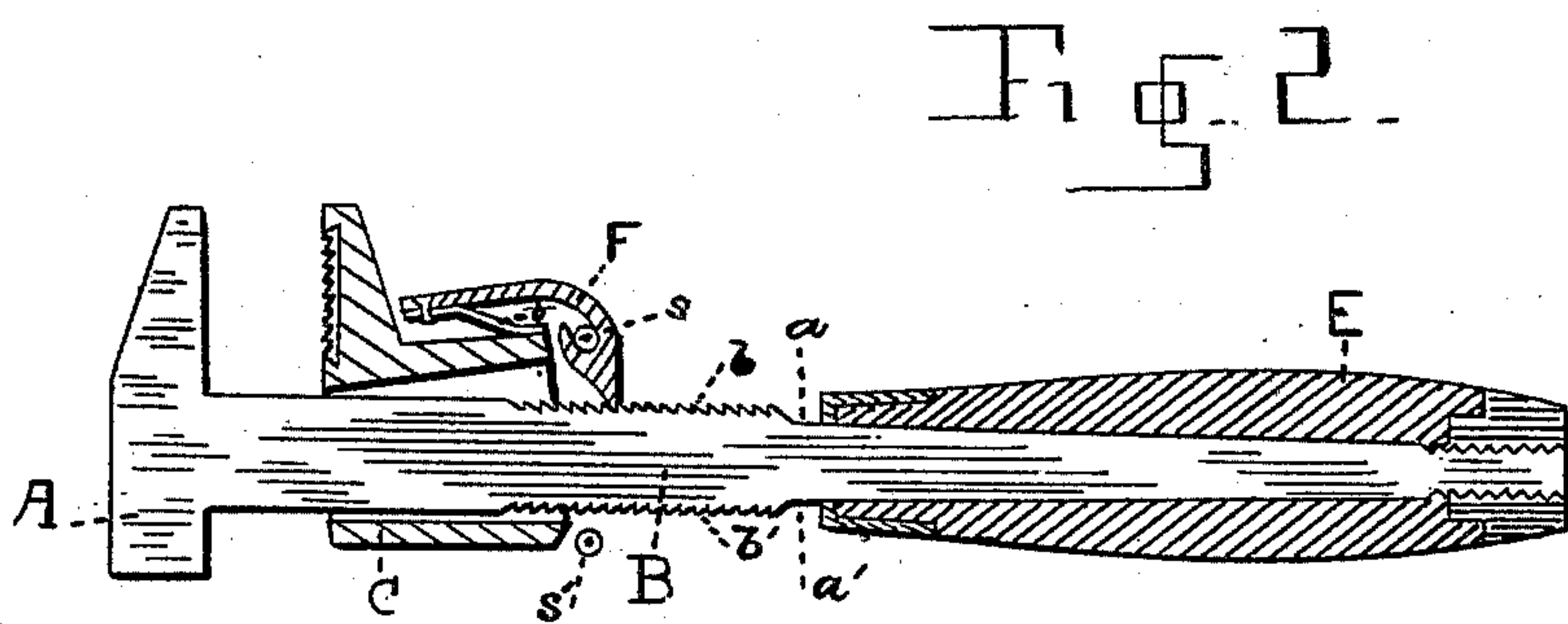
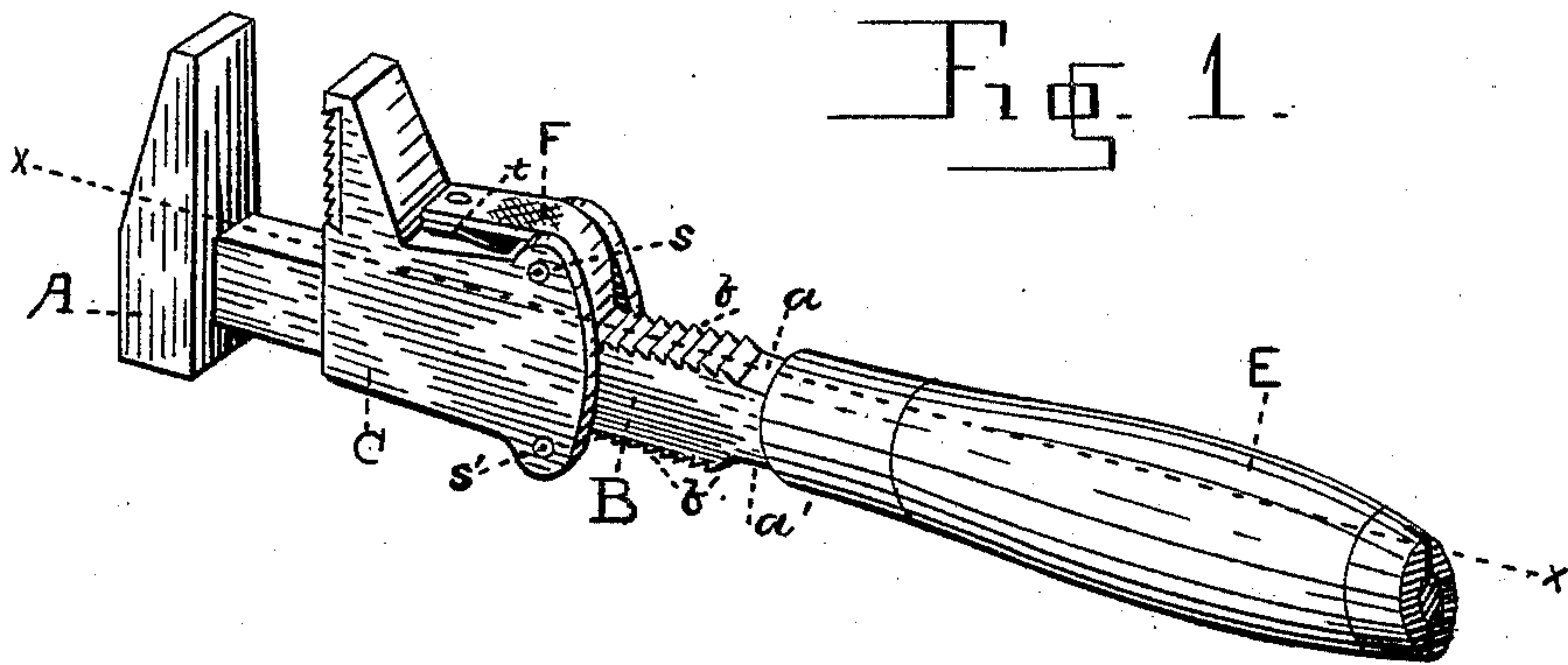


(No Model.)

G. B. SCHAEFFER.
PIPE OR NUT WRENCH.

No. 464,899.

Patented Dec. 8, 1891.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE B. SCHAEFFER, OF CHICAGO, ILLINOIS.

PIPE OR NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 464,899, dated December 8, 1891.

Application filed April 1, 1891. Serial No. 387,305. No model.)

To all whom it may concern:

Be it known that I, GEORGE B. SCHAEFFER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Pipe and Nut Wrenches, of which the following is a specification.

My invention relates to that class of wrenches capable of being used either as a pipe or nut wrench. As a nut or "monkey" wrench it relates to that particular class in which there is a fixed and a movable jaw, the movable jaw having a free sliding motion to and from the fixed jaw, whereby it is capable of quick adjustment to different-sized nuts, and when so adjusted it is automatically locked in position.

The second part of my invention has relation to its adaptability as a pipe-wrench. I quickly transform the nut or monkey wrench to a pipe-wrench by simply transferring a spring-dog from the upper to the under side of the movable jaw, as will be hereinafter more fully described.

Figure 1 is a perspective view of my invention used as a nut or monkey wrench. Fig. 2 is a sectional view in the line $x x$, and Fig. 3 is a sectional view when my invention is used as a pipe-wrench.

In the drawings, A is the fixed or rigid jaw, formed integral with or attached to the shank B, provided with the handle E.

C is the movable jaw, carrying the spring-dog F, and $s s'$ are steel pins on which said dog works.

Upon the upper and lower surfaces of the shank B, near the handle E, I provide grooves or recesses $a a'$ and form fine saw-shaped teeth $b b'$ across the upper and under side, and to such a distance on said shank B as will correspond with the travel of the movable jaw. The teeth $b b'$ point toward the movable jaw and hold it from sliding backward when in use.

The movable jaw C is made with a suitable opening to allow a free sliding motion on the shank B and only a downward motion to the heel of said jaw, as clearly shown in Fig. 3.

Thus I secure the diversible angle necessary to the engaging faces of the jaws A and C to

properly grip a pipe or other round surface. To the upper and under end of the ears formed by the sides of the shell extending beyond the body of the movable jaw I secure two steel pins s and s' about on a line with the upper and under face or shell of the movable jaw, leaving sufficient room between said pins and the body of the movable jaw to receive the spring-dog F.

The spring-dog F, I make nearly L shape, filling the space between the ears, and it is provided with a socket on its V-shaped end to fit the pins s and s' . The spring t is riveted to the under side and at the end of the arm of said dog, thus locking the movable jaw to the shank at any desired point. I make the solid V-shaped end of the dog F of such a length that when in working position on either pin its outer face will stand nearly at right angles to the shank. I have a twofold object in doing so: First, it allows me to use the finest of teeth or serrations on the shank, and as a result when my movable jaw is run up to a nut or pipe there is little or no give-back to said movable jaw, consequently I need no device for a "take-up;" second, when the strain is on the nose of the movable jaw there is an immediate "grip," and the sharp edge of the dog F presses nearly square down on the bottom of the serration, and the tendency is to deepen the tooth, thus compensating the wear on the points of the serrations as the dog F passes over them when the movable jaw is run up to a nut or pipe.

Any overstrain such as would leave the shank bent does not interfere with the working of my movable jaw. All I require is to allow sufficient space between the body of the movable jaw and the arm of the spring-dog so that when the arm is pressed down against the movable jaw the sharp edge of the dog will be raised sufficiently high above the serrations to allow a slight bending of the shank should it by accident occur. The movable jaw is then released, and it has a free backward motion to be reset to another nut.

To transfer the spring-dog F from the position shown in Figs. 1 and 2 to that shown in Fig. 3, the movable jaw C is run back until the lower end of the spring-dog projects into

the groove or recess *a*, when said dog is depressed downwardly and rearwardly to release it from the pin *s*, and by reversing this motion the spring-dog is caught upon the pin *s'* to adapt the tool for use as a pipe-wrench.

The fixed jaw and shank of my invention I design to make in the sizes and dimensions of those most now in common use, and as the only alteration required in an old shank to adapt it to the use of my invention would be the serrations and slight shoulders or notches across the upper and underside of said shank B therefore any mechanic could easily fit one of my movable jaws to an old shank, and thus at slight expense obtain a new nut-wrench with the addition of a pipe-wrench. The ears of the movable jaw are sufficiently rounded to hold the body of the movable jaw away from the handle when required to transfer the spring-dog from the pins to change the wrench from a nut to a pipe wrench, or vice versa. The upper face of the dog F is serrated, as shown in Fig. 1, to keep the thumb from slipping in removing the dog. The en-

gaging face of the movable jaw is provided with a toothed face-plate.

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

1. In a wrench, the toothed shank B, provided with the grooves or recesses *a a'*, fixed jaw A, and handle E, in combination with the movable jaw C, provided with the dog F, spring *t*, and pins *s s'*, as herein described, and for the purpose set forth.

2. In a wrench, the movable jaw C, having pins *s s'* and provided with the detachable spring-dog F, in combination with the shank B, provided with serrations *b b'*, notches *a a'*, fixed jaw A, and handle E, substantially as specified.

In testimony whereof I have hereto set my hand and seal this 21st day of March, A. D. 1891.

GEORGE B. SCHAEFFER. [L. S.]

Witnesses:

OTTO L. JOHNSON,
H. L. PETERSON.