

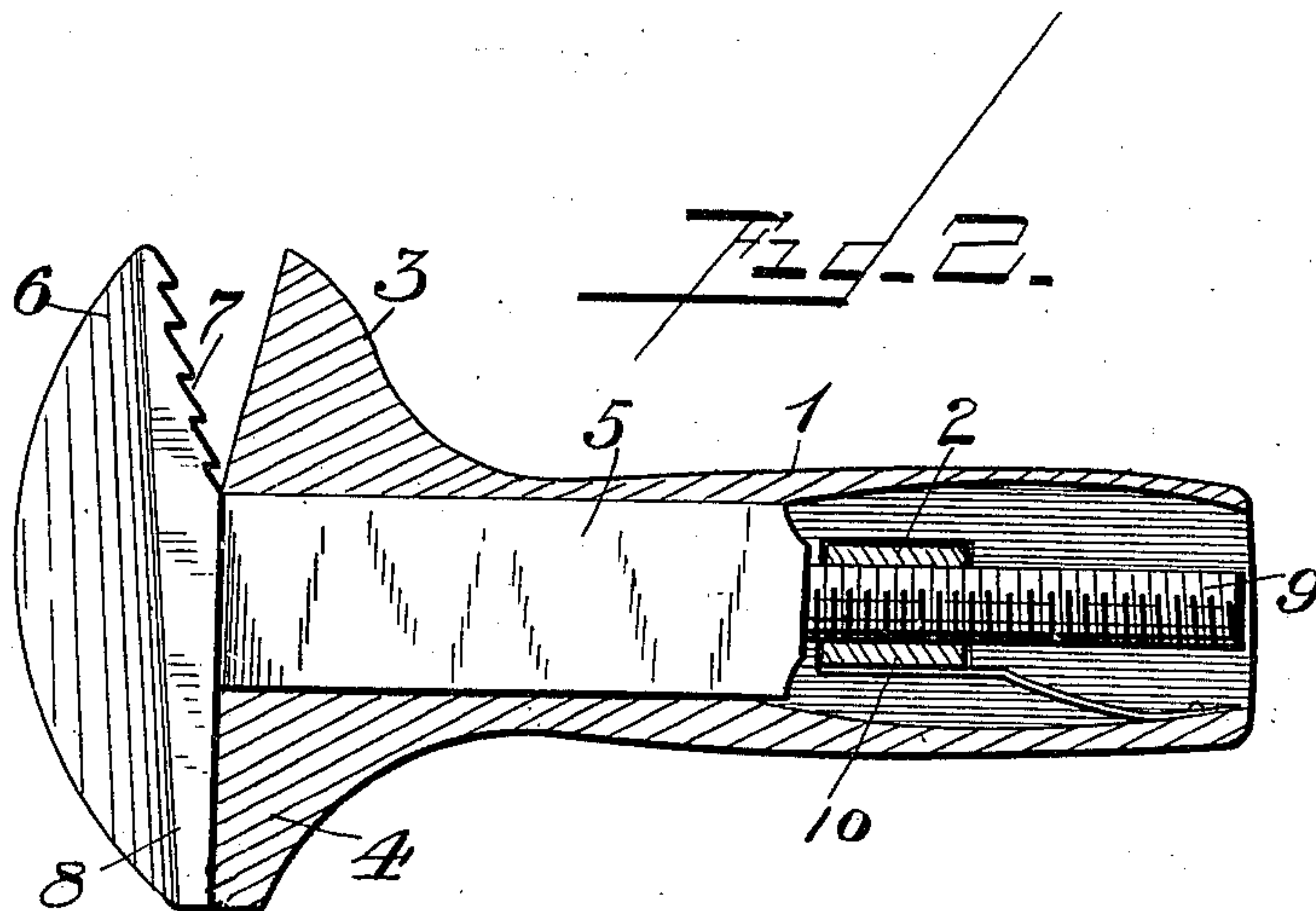
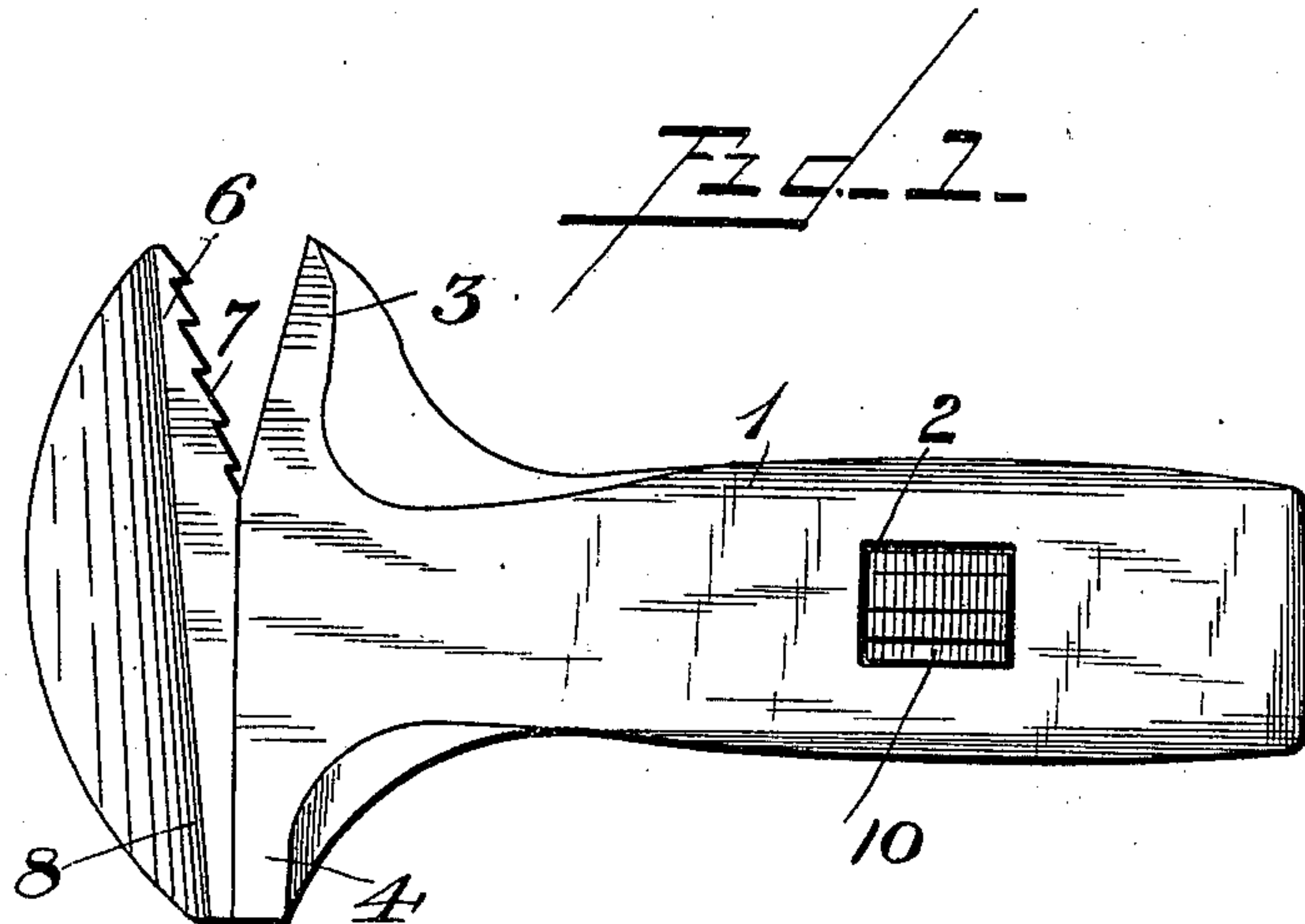
No. 685,656.

Patented Oct. 29, 1901.

F. T. VERHAREN.  
WRENCH.

(Application filed Jan. 31, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK T. VERHAREN, OF SPENCER, IOWA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 685,656, dated October 29, 1901.

Application filed January 31, 1901. Serial No. 45,470. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK T. VERHAREN, a citizen of the United States, residing at Spencer, in the county of Clay and State of Iowa, have invented certain new and useful Improvements in Wrenches; and I do 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.

The invention relates to a sliding-jaw wrench which may be used as a pipe or nut wrench.

The object of the invention is to provide a wrench of this character which shall be simple of construction, durable in use, and comparatively inexpensive of production and one in which the jaws may be moved toward and from each other without changing the angles of their gripping-faces.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of my improved wrench. Fig. 2 is a vertical longitudinal sectional view.

Referring now more particularly to the drawings, the numeral 1 denotes the hollow handle of a wrench the sides of which are provided with registering openings 2 and the outer end of which is provided with jaws 3 and 4, the gripping-face of the jaw 3 extending diagonally to the length of the handle.

5 denotes a shank adapted to slide within the handle and provided at one end with a jaw 6, which extends diagonally in opposite direction to the jaw 3 and is provided with a toothed gripping-face 7. A jaw 8 may also be formed on the shank for coaction with the jaw 4. The inner end of the shank is provided with a screw-threaded stem 9, which is adapted to engage a polygonal nut 10, located within the handle and accessible for operation through the diametrically opposite openings in said handle. A flat spring has one end secured to the inner wall of the handle and bears against one of the polygonal sides of said nut, and thereby prevents the nut being accidentally rotated in the manipulation

of the wrench, thus locking the jaws in positive adjustment.

The teeth of the jaw 6 are set so as to secure the best results in clamping a pipe, and the jaw 6 may be moved toward or from the jaw 3 without changing the relative set of the teeth of the jaw 6 with the gripping-face of the jaw 3, so that the wrench will have the same action on a pipe of small diameter as it will upon a pipe of much larger diameter. This would not be true if the relative positions of the jaws 6 and 3 were changed by the adjustment of the wrench to adapt it to pipes of different diameters. The jaws 3 and 6 may also be used for turning the nut, and in that event it would be unnecessary to construct the wrench with the jaws 4 and 8. These latter jaws, therefore, may be entirely omitted, if desired.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of my improved wrench will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

In a sliding-jaw wrench, the combination of a hollow handle provided at one end with a jaw and having diametrically opposite registering apertures in its sides, a shank slidably mounted in the handle and having a jaw at one end to cooperate with the first-named jaw, said shank being provided with a screw-threaded stem, a nut located within the hollow handle and receiving the said screw-threaded shank and having diametrically opposite flattened points in its periphery projecting through the registering apertures, and a flat or ribbon spring located within the hollow handle and secured at one end thereto, said spring having a free flattened portion adapted to engage said nut to prevent its accidental rotation, the length of said nut being approximately equal to that of the apertures, and the diameter of the nut greater



than the thickness of the handle, whereby its  
ends engage the end walls of said apertures  
and lock the nut against longitudinal move-  
ment while the nut projects exteriorly through  
5 said apertures to permit of its free rotary  
movement, substantially as described.

In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-  
nesses.

FRANK T. VERHAREN.

Witnesses:

HERMAN KUNATH,

ERIK JENSEN.