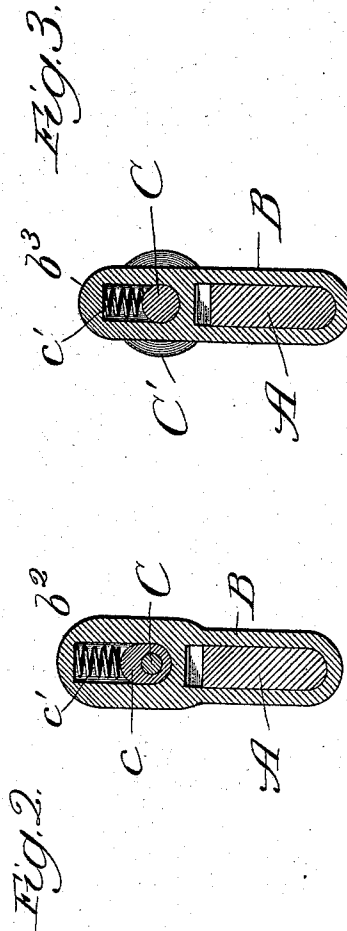
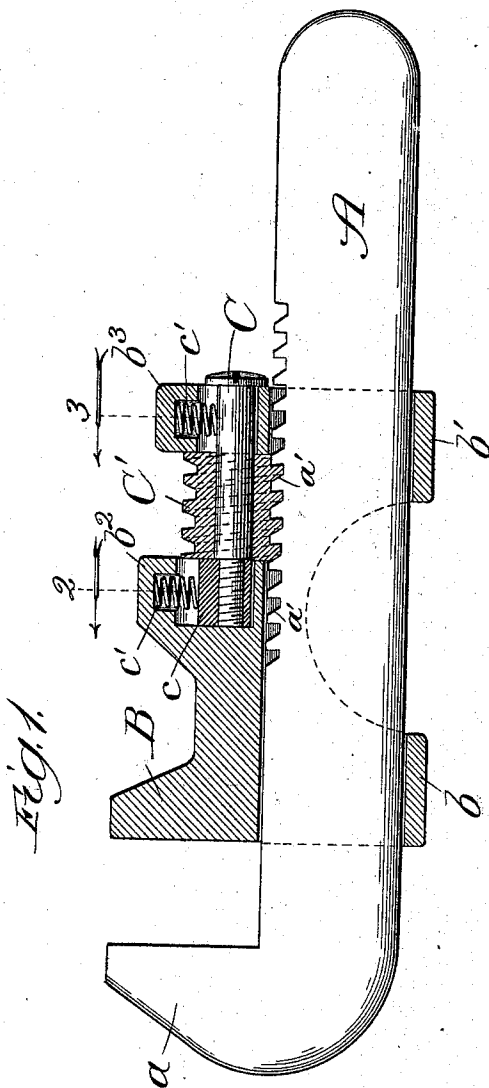


(No Model.)

F. S. SMITH.
WRENCH.

No. 562,497.

Patented June 23, 1896.



Witnesses:
E. S. Gaylord.
L. J. Allen.

Inventor:
Frank Stewart Smith,
By Benjamin P. Sheridan
Att'y.

UNITED STATES PATENT OFFICE.

FRANK STEWART SMITH, OF CHICAGO, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 562,497, dated June 23, 1896.

Application filed February 7, 1896. Serial No. 578,331. (No model.)

To all whom it may concern:

Be it known that I, FRANK STEWART SMITH, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of my invention is to provide a simple, economical, and efficient screw-wrench, adapted to have an easy and rapid adjustment; and the invention consists in the features and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improvement, partly in section; Fig. 2, a transverse section taken on line 2 of Fig. 1, and Fig. 3 a transverse section taken on line 3 of Fig. 1.

In constructing a wrench provided with my improvements, I make a body portion A and provide it at one end with a fixed jaw *a*. I then make a movable jaw B, and mount it slidingly on the body portion, preferably by providing it with two lugs *b b'*, which have openings in which the body portion is loosely fitted.

To provide means by which the movable jaw may be operated, I provide one side of the jaw with two lugs *b² b³*, in which a shaft C is mounted that is provided with an adjusting-worm C'. The ends of the worm bear against the lugs *b² b³*, which hold it against any longitudinal movement.

The shaft C is loosely mounted in elongated openings of the lugs above referred to, and

its inner end is secured in a movable block *c*, which, bearing against the adjustable worm, acts to prevent the easy withdrawal of the shaft. A pair of helical springs *c' c'* act to hold the shaft and worm normally at their inner limit of movement and keep the threads of the worms in engagement with the teeth *a'* on the body portion.

In operation, when it is desired to obtain a rapid adjustment, the worm is pulled out against the action of the springs, the jaw moved to the desired position and the worm released, so as to engage the teeth on the body portion. By turning the worm in the right direction a firm grip on the object may be obtained.

I claim—

In a screw-wrench the combination of a body portion provided with teeth and a rigid jaw, a second jaw slidingly mounted thereon, a worm-shaft having one end secured in a movable block and mounted in elongated openings in the sliding jaw so that it is held against longitudinal movement but is permitted to move laterally, an adjusting-worm rotatably mounted on the worm-shaft, and helically-coiled springs for normally holding the worm in engagement with the teeth on the body portion, substantially as described.

FRANK STEWART SMITH.

Witnesses:

THOMAS F. SHERIDAN,
THOMAS B. MCGREGOR.