

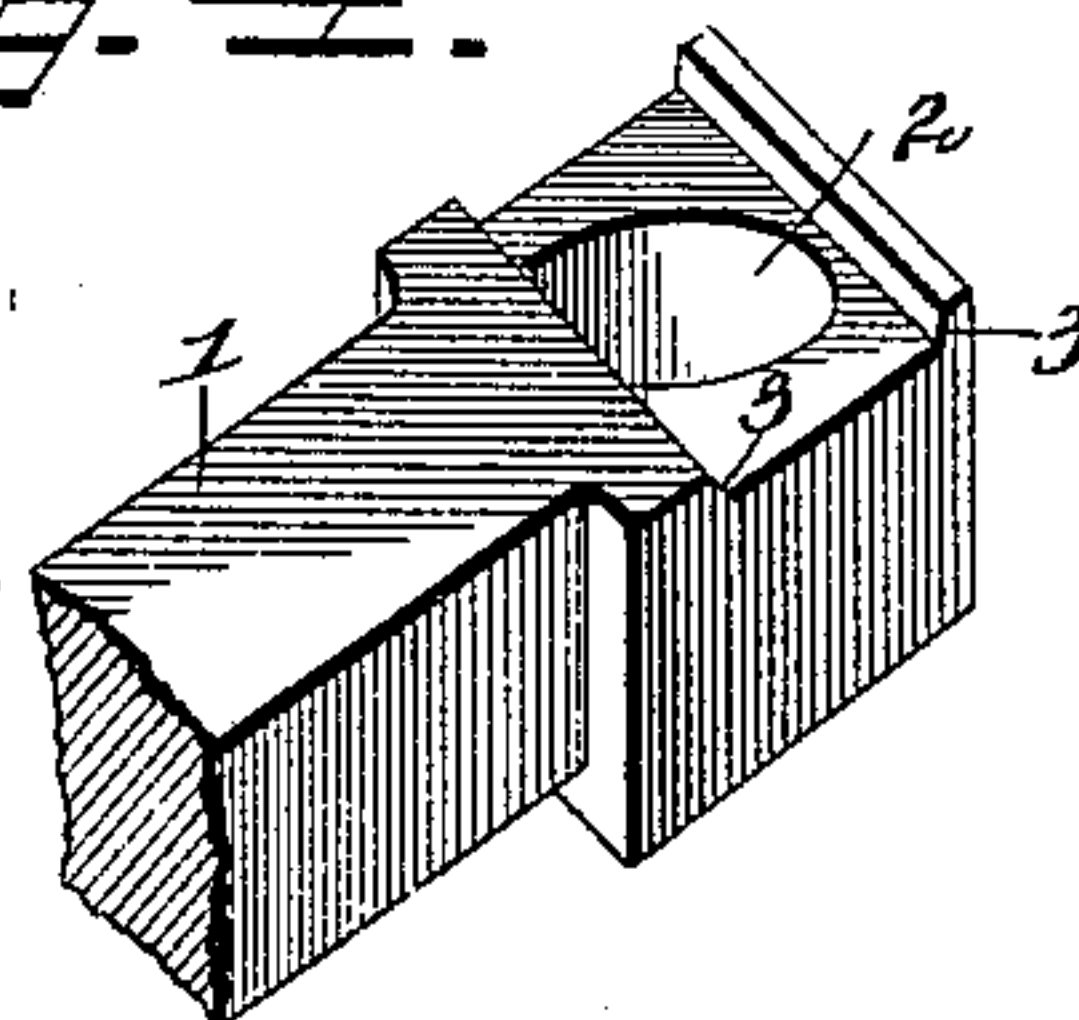
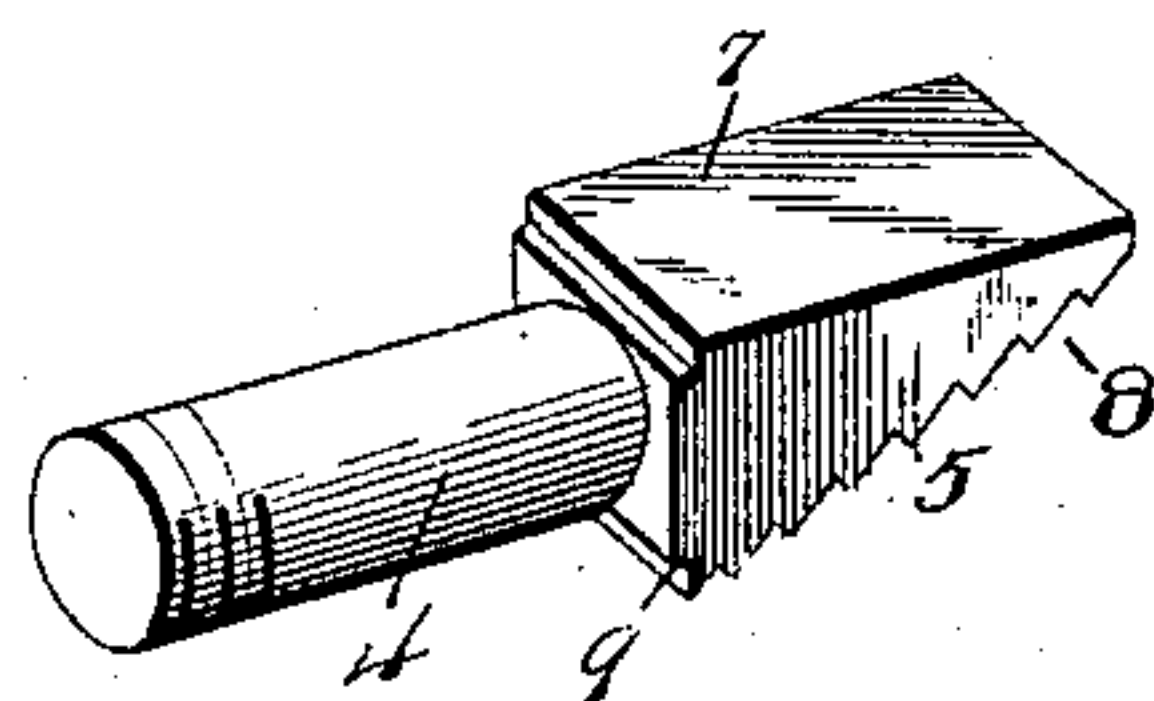
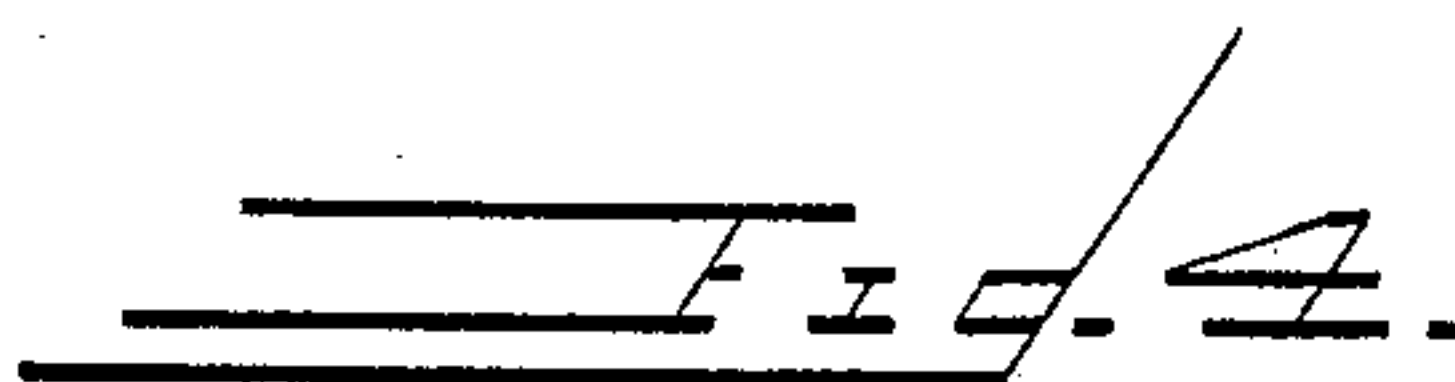
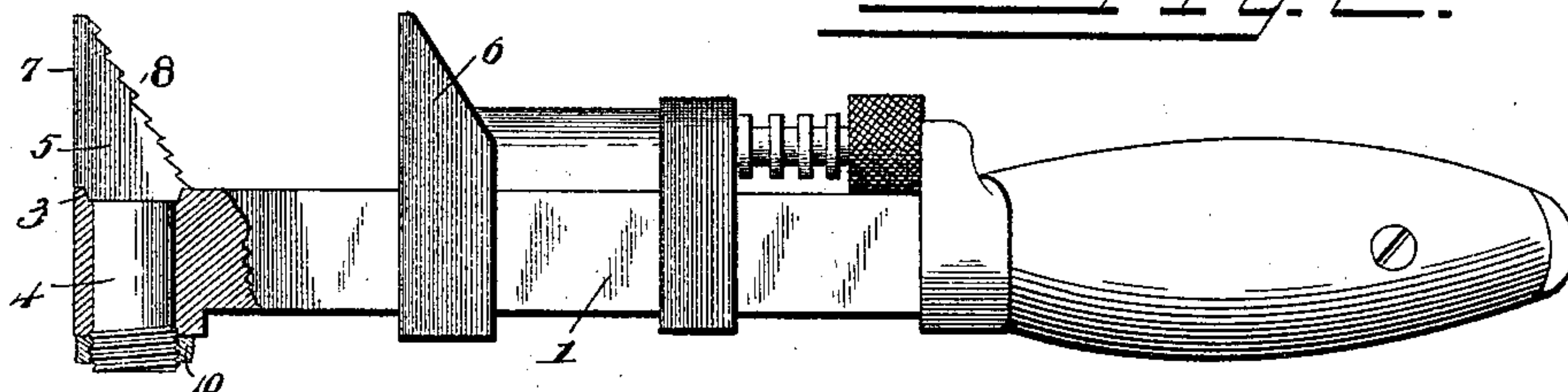
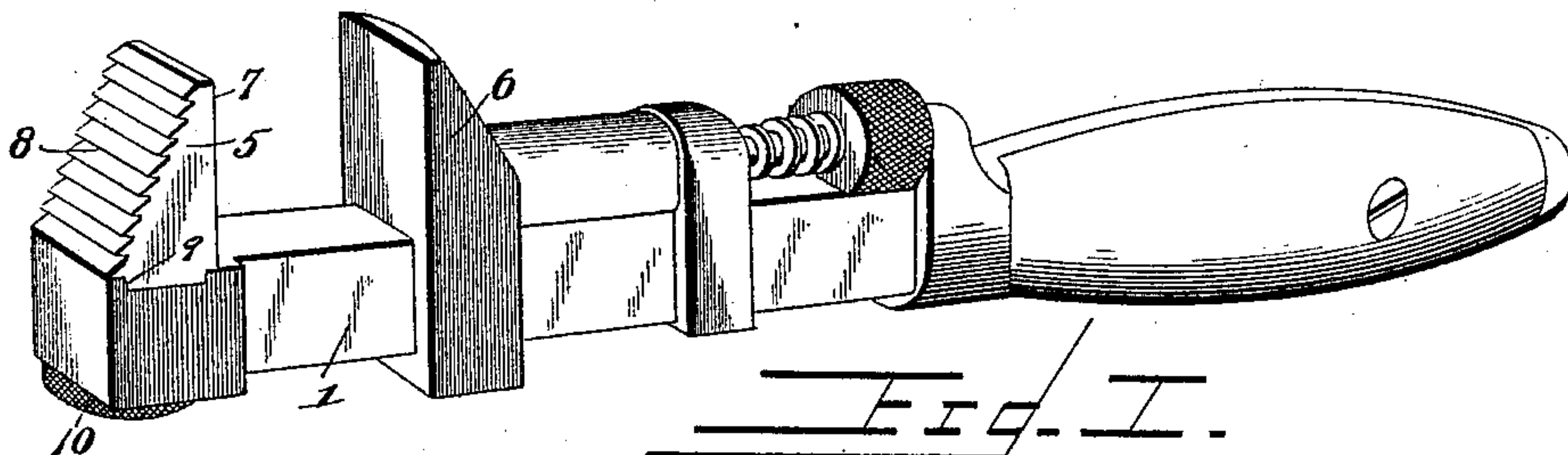
No. 614,156.

Patented Nov. 15, 1898.

J. F. WOODFORD.
WRENCH.

(Application filed July 11, 1898.)

(No Model.)



Witnesses

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By *his* Attorneys.

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UNITED STATES PATENT OFFICE.

JOEL FRANKLIN WOODFORD, OF BROWN'S VALLEY, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 614,156, dated November 15, 1898.

Application filed July 11, 1898. Serial No. 685,633. (No model.)

To all whom it may concern:

Be it known that I, JOEL FRANKLIN WOODFORD, a citizen of the United States, residing at Brown's Valley, in the county of Yuba and State of California, have invented a new and useful Wrench, of which the following is a specification.

The invention relates to improvements in wrenches.

The object of the present invention is to improve the construction of sliding-jaw wrenches and to provide one having a reversible stationary jaw adapted to be arranged to form either a nut or pipe wrench.

A further object of the invention is to enable such stationary jaw to be readily reversed without disconnecting or moving any of the parts, thereby providing a wrench adapted to be used over water or underground without liability of losing any of the parts.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a perspective view of a wrench constructed in accordance with this invention, the parts being arranged to form a nut-wrench. Fig. 2 is a longitudinal sectional view, the stationary jaw being reversed to provide a pipe-wrench. Fig. 3 is a detail perspective view of the reversible stationary jaw. Fig. 4 is a detail perspective view of the outer end of the shank.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a shank provided at its outer end 2, which is slightly enlarged, with an eye and having at the front side thereof inner and outer parallel shoulders 3, which are beveled, as shown, to form a tapering recess. The eye 2 of the shank receives a stem 4 of a reversible stationary jaw 5, which coöperates with a sliding jaw 6, of the ordinary construction.

The reversible stationary jaw, which is substantially triangular in side elevation, is provided with a smooth flat face 7 and has an inclined face 8, which is provided with teeth adapted to engage a pipe or rod when the parts are arranged as illustrated in Fig. 2 of

the accompanying drawings. The inner vertical edge of the reversible jaw is recessed to provide beveled shoulders 9, and the tapered portion between the beveled shoulders 9 is adapted to fit into the recess or space between the shoulders of the shank, whereby the jaw is held stationary in either of its positions.

The stem of the reversible jaw, which is arranged horizontally, extends transversely through the eye of the shank and projects beyond the same, the extended portion being threaded and engaged by a nut 10, whereby the reversible jaw is retained firmly in engagement with the shank. The threaded portion of the stem extends sufficiently beyond the shank to permit the nut to be loosened enough to disengage the shoulders of the shank and the reversible jaw, so that the latter may be changed from one position to the other without removing the nut from the threaded stem. By this construction the adjustment of the reversible jaw is effected without taking the wrench apart or separating one part from another, and the wrench is especially adapted by such construction for work over water and underground, as there is no liability of any of the parts being lost.

The sliding jaw 6, which is mounted on the shank, may be operated by a screw, as illustrated in the accompanying drawings, or any other suitable means may be provided for effecting such adjustment, and the shank is provided at its inner end with a suitable handle.

The invention has the following advantages: The stationary jaw is adapted to be readily arranged with its smooth flat face, as shown in Fig. 1, to enable the wrench to operate on nuts and similar objects, and it can be reversed to bring its toothed pipe-engaging face opposite the sliding jaw without separating any of the parts. The construction for securing the reversible jaw to the shank is simple and possesses great strength. The nut draws the body portion of the reversible jaw into the recess of the shank, where it is firmly wedged and held against rotary movement.

What I claim is—

In a wrench, the combination of a shank provided with an eye and having parallel shoulders arranged at one side of it adjacent

to the eye, a reversible stationary jaw having
a nut-engaging face at one side and a pipe-
engaging face at the opposite side, and pro-
vided with a stem extending through the eye
5 and threaded, said stationary jaw being pro-
vided at its inner end with shoulders inter-
locking with those of the shank, a nut engag-
ing the threaded stem of the reversible jaw
and adapted to be loosened without removing
10 it from the stem to permit the stationary jaw

to be reversed, and a movable jaw mounted
on the shank, substantially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

JOEL FRANKLIN WOODFORD.

Witnesses:

GEORGE GILL,

JOHN R. TYRRELL.