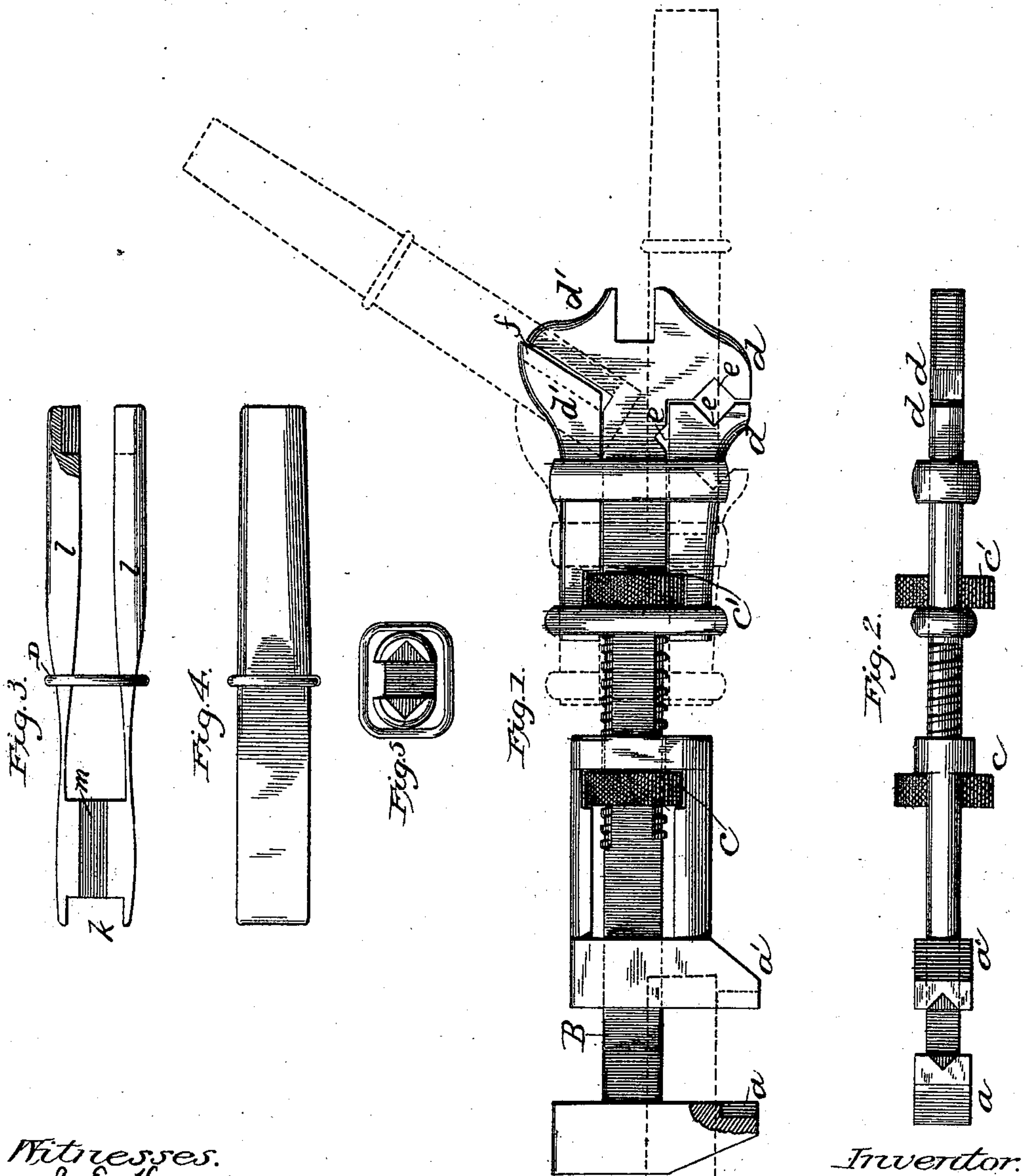


(No Model.)

W. R. SHERMAN.
SCREW WRENCH.

No. 539,311.

Patented May 14, 1895.



Witnesses.
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SCREW-WRENCH.

SPECIFICATION forming part of Letters Patent No. 539,311, dated May 14, 1895.

Application filed November 16, 1892. Serial No. 452,229. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. SHERMAN a citizen of the United States, residing at Secretary, in the county of Dorchester, State of Maryland, have invented a new and useful Improvement in Screw-Wrenches, of which the following is a specification.

The objects of my improvement are, first, to provide jaws with V shaped grooves to grip the nut by the corners and thereby prevent it from slipping; second, to provide an adjustable part also with V shaped grooves to grip the nut by the corners; also an adjustable diagonal part to grip the nut, each working independently of the other; third, an adjustable clamp opening with a spring also with V shaped grooves to grip the nut by the corners, the whole formed into an adjustable combination screw wrench with which a nut in any and all positions may be operated. I attain these objects by the mechanism illustrated by the accompanying drawings, in which—

Figure 1 is a plan view of the entire instrument; Fig. 2, a side view of the same as it appears after the removal of the spring-clamp; Fig. 3, a vertical elevation, partly in section, of the spring-clamp, which may be attached or not, as desired; Fig. 4, a side view of Fig. 3; Fig. 5, an end view of Fig. 3.

Similar letters refer to similar parts throughout the several views.

The screw wrench with the spring clamp removed is made with the usual threaded bar B, standing jaw *a*, movable jaw *a'*, and turning nut *c*. At the other end the bar B is provided with a fixed head, having laterally extending jaws *d d'*, having respectively a rectangular recess with angular notches, *e, e*, in its faces and an inclined face with longitudinal angular gripping recess *f*. Shown by dotted lines in Fig. 1. Combined with this are a pair of inner jaws correspondingly recessed and connected together so as to form a socket, through which the screw shank passes, and a nut *c'* seated on said inner jaws and serving by engagement with the threaded bar B to move the inner jaw upon the shank of the outer jaw. I provide, also, a spring clamp having

a rectangular recess *k*, at its closed end and at the other a pair of tapered spring arms *l, l*, angularly notched at their extremities to engage the corners of a nut. The body of the clamp is longitudinally recessed at *m* to engage the face of either of the jaws or the jaw shank.

To connect the spring clamp to the screw wrench it is necessary to open the jaws *a*, and *a'*, by turning the nut *c*, sufficiently to permit the insertion of the standing jaw *a* between the springs of the clamp and the movable jaw *a'* within the slotted end of the spring clamp, the bar B being inserted laterally in the groove made for the purpose, thereby placing the slotted jaws of the spring clamp in position to reach and operate a nut inside of a pipe or in other similar position. The spring clamp may also otherwise be connected to the screw wrench by placing the bar B in the jag made for the purpose located between the springs of the clamp, said spring clamp being at right angles to the bar and placed between the jaws *a* and *a'*, thereby producing a wrench with which a nut located in a corner may be operated. As this arrangement is readily understood it has not been illustrated in the drawings. The spring clamp may also be applied to the other end of the wrench. In either case the spring clamp is firmly held in position between the jaws *a* and *a'* of the wrench by turning the nut *c*. The jaws of the spring clamp are adjusted by moving the ring D which surrounds them.

The spring clamp is easily attached to or removed from the screw wrench and the wrench requires no adaptation to receive the removable spring clamp. Hence the wrench can be applied to ordinary uses when the said clamp is detached.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wrench an outer jaw having a screw threaded shank and head having lateral extensions on either side, the one having an angular gripping recess, the other a rectangular recess with angular notches in its faces, combined with a pair of inner jaws correspond-

ingly recessed and connected together so as
to form a socket through which the screw
shank passes and a nut seated in said inner
jaws and moving the inner upon the shank
5 of the outer jaws.

2. The combination of a primary wrench
and a supplemental clamp consisting of a
pair of spring jaws being slotted endwise and

laterally to engage the jaws and shank of
the primary wrench all substantially as set
forth.

WM. R. SHERMAN.

Witnesses:

J. HARRY HOWARD,
B. W. HOLLAND.