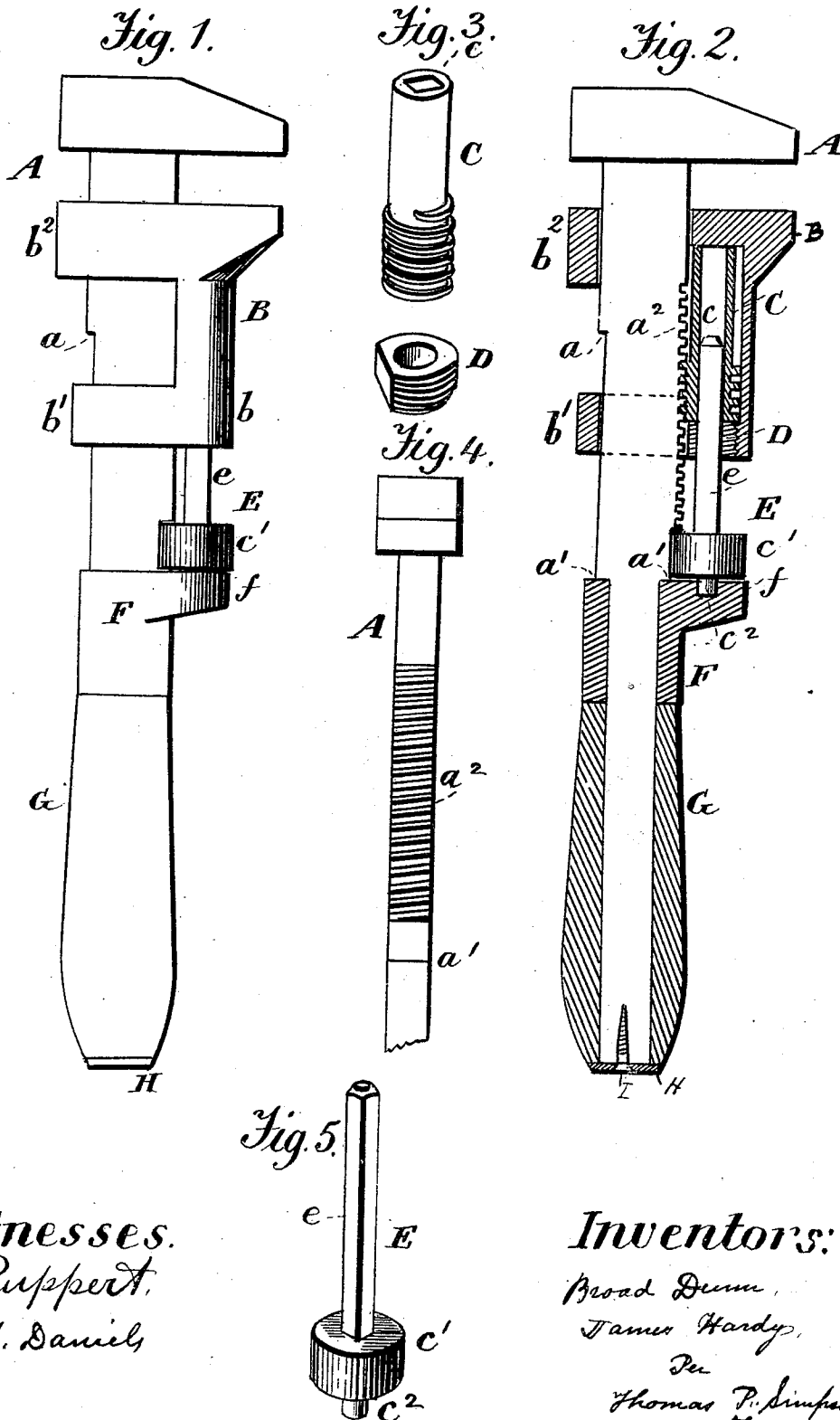


(No Model.)

J. HARDY & B. DUNN.
NUT WRENCH.

No. 513,233.

Patented Jan. 23, 1894.



Witnesses.
A. Ruppert,
H. A. Daniel,

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UNITED STATES PATENT OFFICE.

JAMES HARDY AND BROAD DUNN, OF CLAYVILLE, NEW YORK.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 513,233, dated January 23, 1894.

Application filed March 2, 1893. Serial No. 464,301. (No model.)

To all whom it may concern:

Be it known that we, JAMES HARDY and BROAD DUNN, citizens of the United States, residing at Clayville, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Nut-Wrenches; and we 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention relates to that class of wrenches in which one jaw is fixed while the other has a sliding adjustment on the shank of the fixed jaw, the outer end of said shank being provided with a handle.

The invention will first be described in connection with the drawings and then pointed out in the claim.

Figure 1 of the drawings is a plan view of the wrench as an entirety; Fig. 2 a longitudinal vertical section thereof; Fig. 3 a detail perspective of the hollow screws; Fig. 4 a detail view of the fixed jaw and shank; Fig. 5 a detail view of the finger bolt and its bearing.

In the drawings, A represents the shank of the fixed jaw having the shoulder *a* and the opposite shoulders *a'* *a'*, also the rack *a*².

B is the sliding jaw with a shank having the circular portion *b* internally threaded and the downward projections *b'* *b*² having the interior rectangular openings to receive the rectangular shank A, the projection *b'* being made to work up against the shoulder *a*. In the portion *b*, works a screw C which is provided with a square hole *c* and is held loosely therein by a hollow screw D which works in a thread in the rear end of portion *b*.

E is a bolt having a square shank *e* which passes through the hollow screws C D, the screw C having a square hole to turn with the bolt and the screw D having a hole large

enough to permit the shank *e* to turn freely within it.

c' is the finger grip by which the bolt is turned, while *c*² is a trunnion which turns in a bearing *f* of the sleeve F which slides up to the shoulders *a'* *a'* of the shank A.

Between the rack *a*² and the upper end of sleeve F works the finger grip *c'* and against the sleeve abuts the inner end of the handle G which has a square hole through it to receive the squared end of the shank A.

In the end of shank A, on a washer H, we put the screw I whose head preferably fits in a countersink of the washer.

We are aware that a ratcheted bar, with a wrench jaw slid thereon by means of a hollow screw, is not new; also that a swiveled rod to turn the screw has been keyed to said screw by a pin, as shown in the United States Patent No. 56,460, granted July 17, 1866, to Stover; also that the swiveled rod has been connected to the screw by means of a collar which turns with the rod and carries the worm around; but

What we claim as new, and wish to protect by Letters Patent, is—

The shank A with shoulders *a* *a'* and rack *a*², the jaw B with circular hollow shank *b* and hollow projections, *b'* *b*², the square-holed screw C, the hollow screw D serving both as an abutment to screw C and a bearing for the bar E, the square bar E trunnioned in a sleeve F, and the grip *c'* fast on said bar and rotating between the rack and sleeve, all combined, connected and arranged as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES HARDY.
BROAD DUNN.

Witnesses:

C. L. MARSHALL,
MICHAEL HARDY.