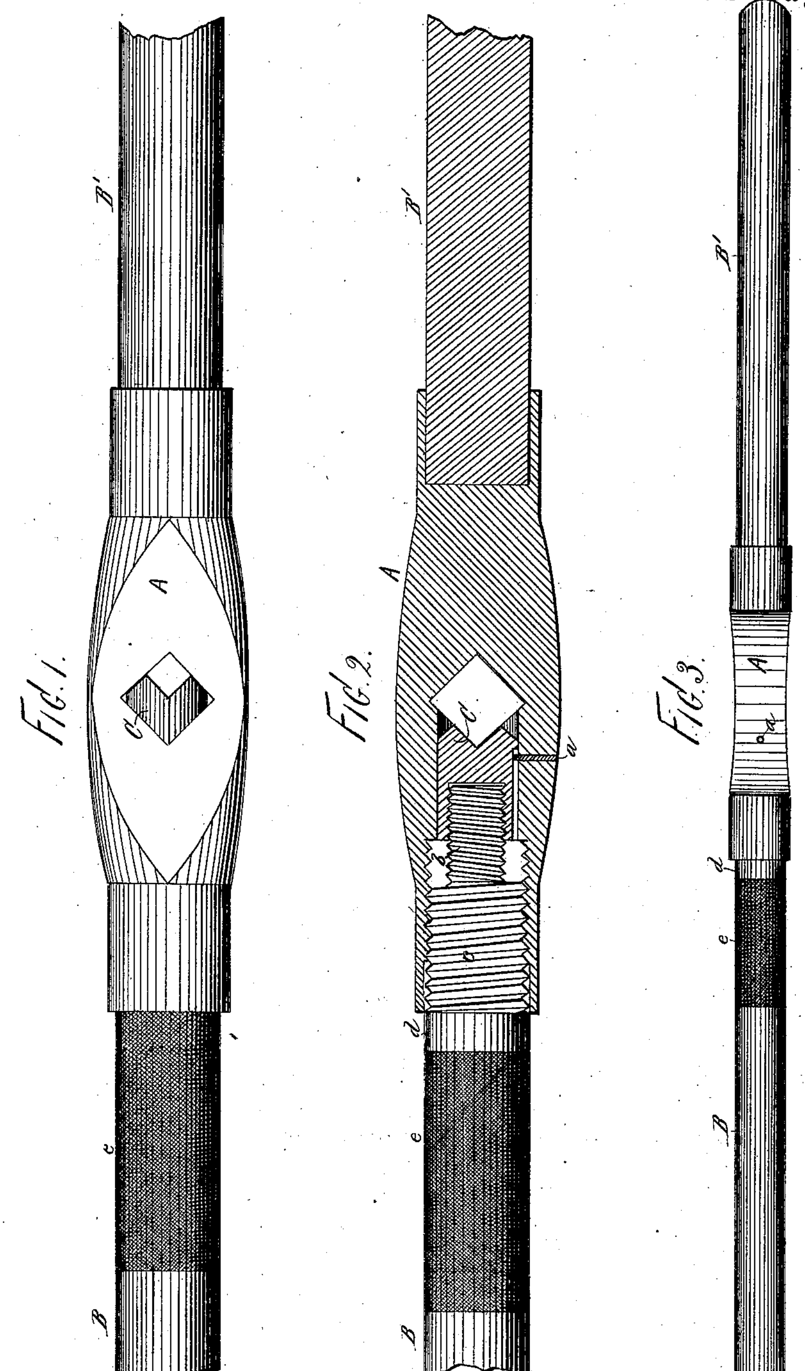
(No Model.)

N. SAWYER.

TAP WRENCH.

No. 298,029. Patented May 6, 1884.



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UNITED STATES PATENT OFFICE.

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TAP-WRENCH.

SPECIFICATION forming part of Letters Patent No. 298,029, dated May 6, 1884.

Application filed July 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, NELSON SAWYER, of Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Tap-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to wrenches for holding and turning screw-taps, ordinarily called "tap-wrenches," and has for its object the production of a wrench simple, strong, and durable—adjustable, so as to accommodate any size of tap, (within all ordinary limits,) capable of holding the tap firmly or without liability of slipping, and one easy and always ready for adjustment, not liable to get out of order, and not liable to become clogged with metal chippings or foreign matters. To accomplish this my improvements involve a novel and useful wrench having certain peculiarities of construction and arrangements or combinations of parts, as will be herein first fully described, and then pointed out in the claim.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of a wrench constructed and arranged for operation in accordance with my invention, the ends of the handles being broken away. Fig. 2 is an axial section and partial elevation of so much of the wrench as is shown in Fig. 1. Fig. 3 is an edge view or side elevation of the complete wrench on a scale smaller than in previous figures.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

A is the central part or wrench-head within which the shank of the tap is to be clamped, and B B′ are the two long handles by which the wrench is to be operated. The part A is provided with a central angular opening, (through and through across its axis,) to receive the angular head of the tap, and is preferably made of steel, so as to resist wear. The handle B′ is secured in one end of the head in any firm and substantial manner. The end of the wrench-head opposite handle B′ is perforated longitudinally, the perforation extending through to the central angular opening, and screw-threaded for a short distance on its interior. A movable bit, C, cylindrical in general form, and having an angular notch in its bearing end, is movable back and forth within the longitudinal perforation, and serves to enlarge or contract the angular opening, and thus adapts the wrench to hold taps of various sizes. The bit is also preferably made of steel. It is prevented from turning in its seat by a pin, *a*, driven in from the exterior, and entering a slot or groove cut in the surface of the bit. This pin also prevents withdrawal of the bit by abutting against the end wall of the slot.

The handle B is provided with a threaded projection, *b*, fitted to enter the threaded end of the bit and to turn therein, and also with another threaded portion, (represented at *c*,) and arranged to engage with the threads upon the interior of the socket in the end of the wrench-head. The interior threads in the socket stop short of the outer end of said socket, as indicated, leaving a plain or smooth space at the end for the reception of the plain part *d* of handle B, fitting snugly therein. The two sets of threads upon the handle B run in opposite directions. By turning handle B so as to screw it and unscrew it within the head, the bit will be advanced and retracted as may be required, but cannot be withdrawn. The threaded end *b* serves to connect the handle and bit, allowing one to turn within the other, but compelling both to move together longitudinally. During use of the implement, foreign matter is excluded from the longitudinal perforation in the head by the bit at one end, which fits snugly in its seat, and by the plain part *d* of handle B at the other end. Thus, while having all the advantages of an adjustable wrench, the implement is for all practical purposes as free from becoming clogged up as those wrenches wherein no provision is made for adjusting the size of the jaw.

All the movable parts are simple, and all the work thereon necessary to fit them for use may be done on the ordinary lathe, whereby the cost of the implement is much less than would be the case if otherwise constructed.

The implement can be used either side up, can be quickly adjusted to hold the tap, and

when clamped upon the head thereof will hold the same firmly and without danger of being accidentally loosened.

At *e* a part of the handle is checked or roughened, to afford a secure purchase for the hand while turning it.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The socketed wrench-head having the angular opening, the movable bit, the retaining-pin, and the handle having the oppositely-inclined threaded portions and plain part, all combined and arranged substantially as shown and described, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

NELSON SAWYER.

Witnesses:

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