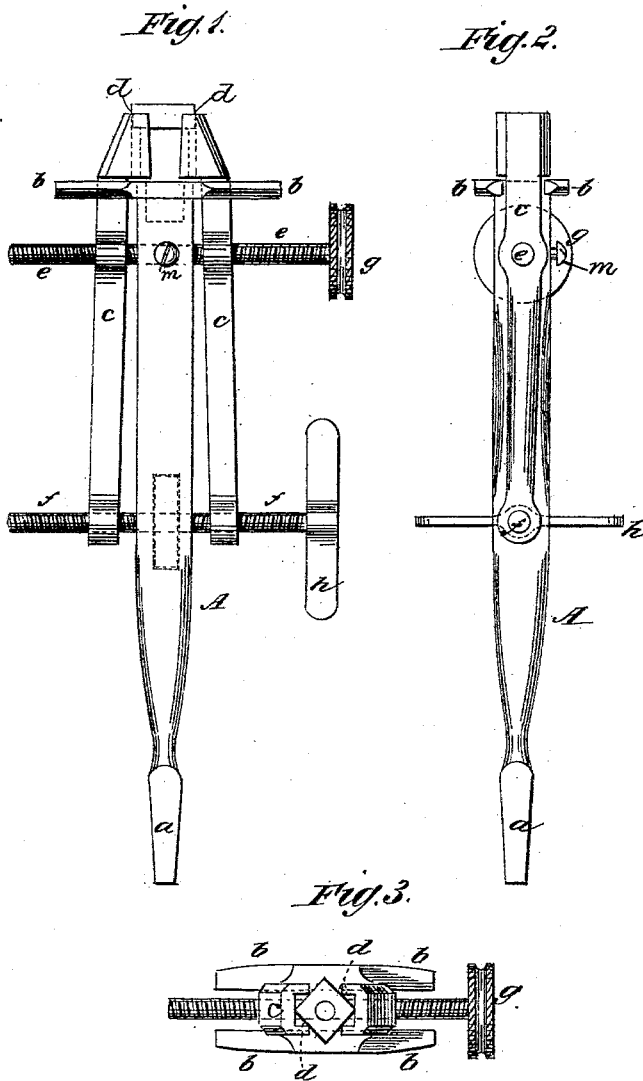


J. GOODRICH.
Nut and Tap Wrench.

No. 210,684.

Patented Dec. 10, 1878.



WITNESSES:

Francis McDowell
C. Sedgwick

INVENTOR:

J. Goodrich
BY *Munn & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH GOODRICH, OF HENRY, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO
JAMES B. WALLER, OF COOK COUNTY, ILLINOIS.

IMPROVEMENT IN NUT AND TAP WRENCHES.

Specification forming part of Letters Patent No. **210,684**, dated December 10, 1878; application filed
April 2, 1878.

To all whom it may concern:

Be it known that I, JOSEPH GOODRICH, of Henry, in the county of Marshall and State of Illinois, have invented a certain new and Improved Wrench and Vise, of which the following is a specification:

The object of my invention is to provide a convenient wrench and vise for grasping and holding nuts and other articles, which may be used in a bit-brace, or in connection with an ordinary tap-wrench, or in a lathe or tapping-machine for holding work to be operated upon, or which may be attached to a bench and used as a stationary vise.

The invention consists, essentially, in a shank having two jaws, one upon either side, which are moved by right-and-left-hand screws, so as to open and close simultaneously.

In the drawings, Figure 1 is a side elevation of my improved wrench and vise. Fig. 2 is a front elevation. Fig. 3 is an end view.

A is a shank, which may have a squared and tapered end, *a*, adapted to fit a bit-brace or ordinary tap-wrench. From opposite sides of the shank A arms *b* project at right angles to the shank, two of the said arms being on each side of the shank.

Between the arms *b*, on opposite sides of the shank, are placed jaws *c*, which are similar to ordinary vise-jaws, and are guided by the arms *b*. A slot, *d*, may be formed in the face of each jaw for receiving the corners of a nut.

The jaws are substantially parallel with the shank A, and two screws, *e f*, pass through the jaws and the shank. These screws have upon one side of the shank a right-hand and upon the other side a left-hand thread, which engage corresponding internal threads in the

jaws *c*. Each screw *e f*, where it passes through the shank A, is plain or cylindrical, and to prevent it from moving endwise it is provided with a circumferential groove, which is engaged by a screw or stop, *m*, inserted through the side of the shank.

The screw *e* is shown as provided with a milled head, *g*, and the screw *f* with a thumb-piece or T-head, *h*, for convenience in turning; or, as a substitute for this construction, a milled wheel may, if desired, be secured to the center of each screw, and placed in a mortise formed in the middle of the shank A, as indicated by dotted lines in Fig. 1. In this arrangement the screws or stops *m* may be dispensed with.

The jaws are adjusted to different objects and kept parallel with each other by turning both of the screws *e f*, and they are tightened by first screwing up the screw *e*, and afterward spreading the posterior ends of the jaws by means of the screw *f*. The jaws are thus employed as levers to multiply the pressure of the screw *f*, the screw *e* being used as a fulcrum.

I claim as my invention—

1. The combination of the shank A, movable jaws *c c*, and right-and-left-hand screws *e f*, working independently of each other, substantially as set forth.
2. The combination of guides *b b* with the shank A, for supporting the jaws *c*, substantially as herein set forth.

JOSEPH GOODRICH.

Witnesses:

W. GALLAHER,
C. C. JONES.