C. H. FOWLER.
Tap-Wrench.

No. 207,172. Patented Aug. 20, 1878.

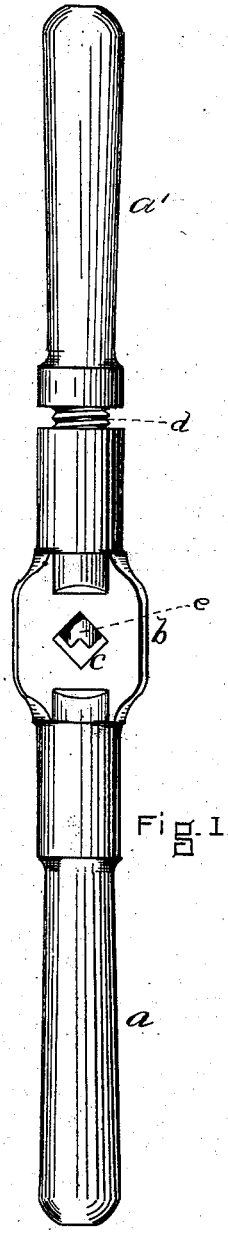

Fig. 1.

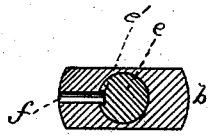

Fig. 3.

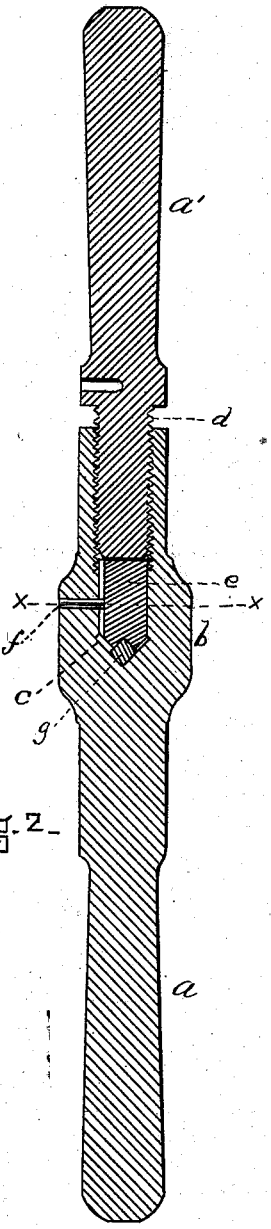

Fig. 2.

WITNESSES

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INVENTOR

Charles H. Fowler

By his Att'ys.

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UNITED STATES PATENT OFFICE.

CHARLES H. FOWLER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE HALF HIS RIGHT TO DANIEL GOODNOW, JR., OF SAME PLACE.

IMPROVEMENT IN TAP-WRENCHES.

Specification forming part of Letters Patent No. **207,172**, dated August 20, 1878; application filed April 11, 1878.

To all whom it may concern:

Be it known that I, CHARLES H. FOWLER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Tap-Wrenches, of which the following is a specification:

This invention relates to adjustable tap-wrenches for shanks of different sizes.

The object is to produce a good and efficient tap-wrench, which shall be strong, durable, and adjustable, and yet can be produced at a low cost.

In tap-wrenches constructed in the ordinary manner there has to be an opening, into which tho handle is to be screwed, and also provision in the central hole for the die or dies to slide, in order to make it adjustable—as a V-shaped groove, for instance.

In this improvement the die is round, and fits and slips into the hole into which the handle screws. Thus provision is made for the handle and die in the same longitudinal hole, and the die, being round instead of flat, is cheaper and easier to manufacture.

By these means a tap-wrench is produced equally useful and much cheaper than the ones now in common use.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts, Figure 1 is a plan of a tap-wrench embodying my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross-section upon line *x x*, Fig. 2.

a and *a'* are the two handles of the wrench. The handle *a* is the longer, and contains the central flat portion *b*, in which the square opening *c* is cut. The handle *a'* terminates in a screw, *d*, which enters the handle *a*, a suitable screw-thread being cut therein for the purpose. The longitudinal hole in the handle *a* extends from the end to the square hole *c*, as seen in Fig. 2. Within this longitudinal opening, lying between the end of the screw *d* and the square opening *c*, is the metallic piece or die *e*. This die *e* has a square or right-angled notch cut in its end and a groove, *e'*, in its side, in which groove fits the pin *f*. The groove and pin *e' f* are to guide the die *e*, (which would otherwise be loose,) so that it may properly approach the square opening *c*.

When a shank, *g*, Fig. 2, is placed in the wrench, the screw *d* upon the handle *a'* is screwed against the die *e* until the said die fits upon the shank and the tap-wrench is ready for use.

Any sized shank, from the size of the opening down to a very small size, can be operated with ease and satisfaction.

The simplicity of the device prevents it from getting out of order and enables it to be made with great strength.

The central portion *b* may be made round or flat, as desired, the cheaper shape being preferable.

Having thus fully described my improvement, what I claim, and desire to secure by Letters Patent, is—

In a tap-wrench, the arm *a*, provided with the central portion *b*, square opening *c*, and longitudinal hole leading to said square opening, in combination with the round die *e*, groove *e'*, and pin *f*, and the arm *a'*, provided with the screw *d*, the same hole providing for the screwing on of the arm *a'* and the entrance and guidance of the round die *e*, all substantially as and for the purpose herein set forth.

CHARLES H. FOWLER.

Witnesses:
HENRY W. WILLIAMS,
B. W. WILLIAMS.