T. H. PHILLIPS.

Wrench.

No. 202,582. Patented April 16, 1878.

Fig. 1.

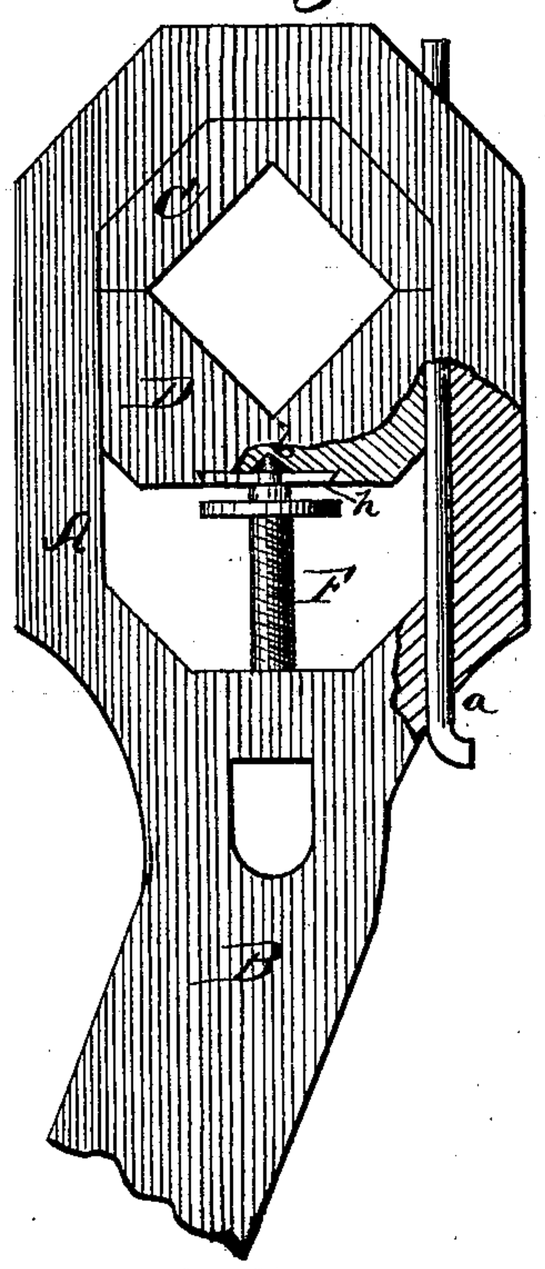


Fig. 2.

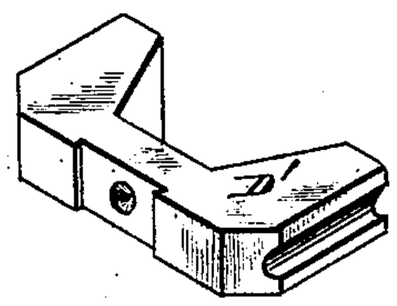


Fig. 3.

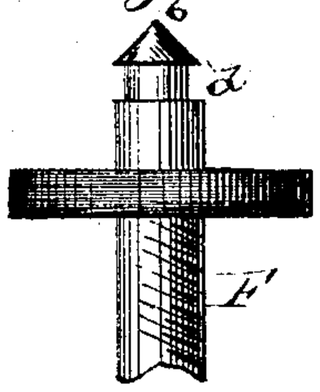
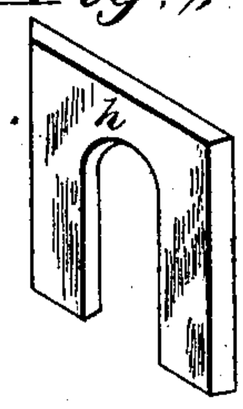


Fig. 4.



Witnesses:
H. B. McArthur
A. L. Ewert

Inventor:
Thomas H. Phillips.
per
J. H. Alexander & Elliott
Attorneys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS H. PHILLIPS, OF ORWIN, PENNSYLVANIA.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **202,582,** dated April 16, 1878; application filed March 14, 1878.

To all whom it may concern:

Be it known that I, THOMAS H. PHILLIPS, of Orwin, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a wrench, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view, partly in section, and Figs. 2, 3, and 4 are details of my invention.

A represents a frame of suitable dimensions, formed with the handle B in one piece. This frame has two parallel sides on the interior at top and bottom, as shown, and in said frame are placed two movable jaws, C and D, which are held therein by means of a loose wire, *a*, along the top. This wire acts as a rib to prevent the jaws from falling out, and also as a guide.

The jaw D is moved by means of a milled head-screw, F, so as to adjust it to different-sized nuts, the rear end of said screw passing through a tapped hole in the rear end of the frame.

The front end of the screw F in the jaw D is tapered to a point at *b*, so as to revolve true, and it causes the jaw D to travel with it forward by this means. The jaw D is moved backward by means of a shoulder, *d*, cut on the screw, back of which a small slotted plate, *h*, is inserted in the back of the jaw, and held by a dovetail, as shown. This slotted plate, together with the loose wire *a*, is for the purpose of removing the jaws or dies, and inserting others to be used for other shaped nuts.

The wrench can, of course, be made with either one or both jaws movable. In case only one is made movable, then the forward portion of the frame is made of suitable shape and of sufficient strength, but it will only answer for one kind or shape of nut.

The jaws or dies C D are so constructed as to obtain a bearing on all four sides of the nut, or just twice as much as in the ordinary wrench, while it makes slipping an impossibility, and preserves the faces of finished nuts.

In hexagon nuts, especially when heavy strain is put on a wrench, the corners are apt to be rounded. With my wrench this is prevented. C′ D′ represent jaws or dies to be used for hexagon nuts.

I am aware that a wrench composed of an open frame, with removable and adjustable dies held in place, and guided by means of removable rods, and operated by a screw, is not new; hence I do not claim such, broadly, as my invention. My wrench, as a whole, has several novel features—as, for instance, the pointed screw and the dovetailed plate, which forms a bearing on three sides of the screw.

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

In a wrench having a frame, A, with handle B, and removable jaws C D, held in place in the frame by a single loose rod, *a*, the combination of the jaw D, having dovetailed recess, as shown, the slotted dovetailed plate *h*, and screw F, formed with the point *b* and circumferential shoulder *d*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THOMAS H. PHILLIPS.

Witnesses:
LEWIS W. HEIL,
H. S. DUTTER.