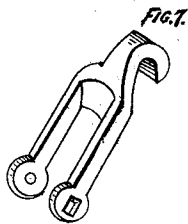
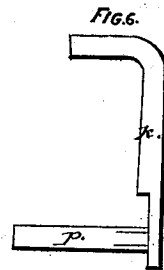
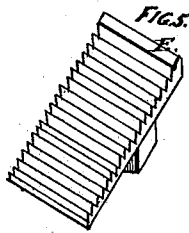
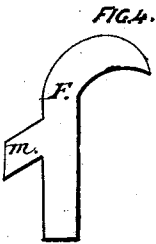
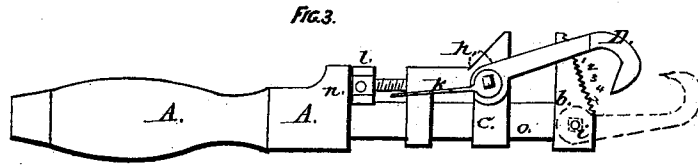
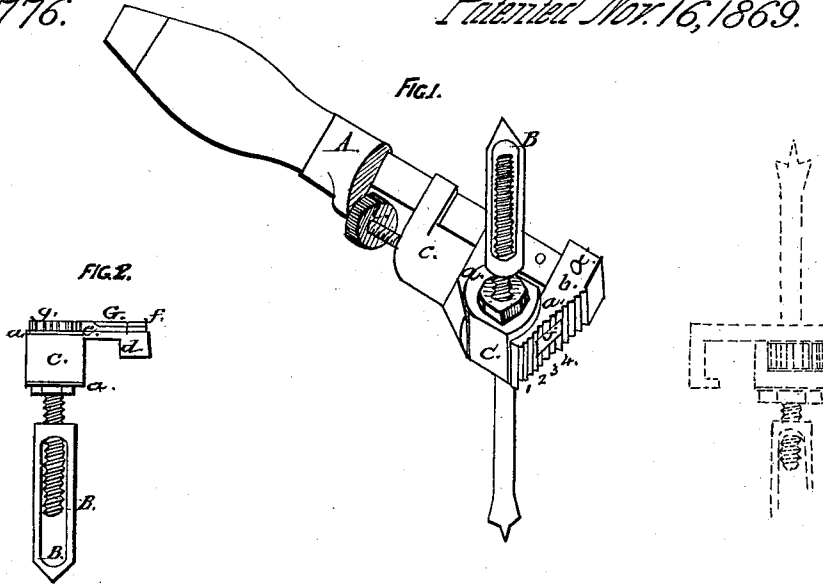


*J. W. Close.*

*Wrench.*

*No. 96,776.*

*Patented Nov. 16, 1869.*



**WITNESSES:**

*W. J. Chamberlain*  
*J. R. Valle*

**INVENTOR:**

*J. W. Close*  
*Per J. W. Close & Co.*  
*Attorneys*

# United States Patent Office.

J. W. CLOSE, OF BUFFALO, NEW YORK.

Letters Patent No. 96,776, dated November 16, 1869.

## IMPROVEMENT IN COMBINED SCREW AND PIPE-WRENCH.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, J. W. CLOSE, of Buffalo, in the county of Erie, and State of New York, have invented a certain new and useful Improvement in a Combined Screw and Pipe-Wrench and Pipe-Cutter; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a screw-wrench, having combined with it a pawl-drill, which latter is designed to be the subject-matter of a subsequent application.

Figure 2 shows the pawl-drill removed from the jaws.

Figure 3, side elevation of the combined screw and pawl-wrench.

Figure 4 shows the pipe-cutter.

Figure 5, the biting-die or plate.

Figure 6, the spring and pin.

Figure 7, the clasp-hook.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in adapting any ordinary screw or "monkey"-wrench to receive various appliances, whereby it is, in effect, converted into a combined pipe-wrench and pipe-cutter, all to be hereinafter fully described.

In the drawings—

A represents the ordinary screw-wrench, having (fig. 1) a pawl-drill, B, held firmly in its jaws, thus making a removable working handle for it, which possesses many advantages over the ordinary stationary handle, one being its double use as a wrench and pawl-drill, and its cheapness, thus combined, over the ordinary ratchet and pawl-drills; another is, that the pawl is more easily adjusted by being disconnected from the handle, as the drill can be set just where wanted in difficult positions to get at, and when thus set, the handle can be fastened on in an instant.

I have shown, in red lines, fig. 1, a different way of fastening a pawl-drill outside of the jaws, and there are, in fact, very many ways in which such a pawl can be attached to the wrench, but I prefer that shown in the drawing, fig. 1.

To hold the pawl perfectly in the wrench, I form on the square box C, of the pawl-drill, flanges *a a*, which rest just over the sides of the jaws *b c* of the wrench, thus preventing any up or down movement, and aiding in holding it tightly in the wrench.

I construct also on this box C an arm, G, (the arm and box are in one piece,) which holds on the spring *e* and pawl *f*, acting on the ratchet-wheel *g*, and also forming a shoulder, *d*, depending from and making a part of the arm which clasps over the bar *o*.

This construction of a pawl-drill, and made without a handle, I believe to be entirely new, and when combined with the wrench, makes a simple and perfect pawl-drill and wrench.

I form in the side of the movable jaw *c* of the wrench a hole, *h*, and a similar hole, *i*, in stationary jaw *b*, for the purpose of holding by a pin, *p*, and spring, *k*, a clasp-hook, D, which converts the screw-wrench into an adjustable pipe-wrench.

This clasp-hook is made forked, and fits over the jaws *c* and *b* of the wrench.

In each end of the fork is a hole, which comes opposite to hole *h*, in movable jaw *c* of the wrench, and through which the pin *p* of the spring *k* passes, suitably secured on the other side.

The pin of the spring (see fig. 6,) is made square at its junction with the spring, and one eye of the clasp-hook is made square to receive it and hold the hook in a proper position to receive the pipe and allow, by means of the spring *k*, a slight play.

The end of the spring is bent inward, and goes under the screw of the movable jaw *c*, between that and the bar *o*.

The great advantage of this clasp-hook is, that when arranged on a screw-wrench, as described, it makes an adjustable pipe-wrench which will hold and work on any size pipe, by merely screwing forward or back the thumb-screw *l* of the wrench.

To give a greater biting or holding power, I serrate the face of the stationary jaw *b*, shown by figs. 1, 2, 3, 4, &c.; or, if desired, the hook part of clasp-hook D can be indented in a similar manner.

As a substitute for this, I form a recess, *j*, in the smooth face of the stationary jaw *b*, into which a die, E, with a biting surface, is set, like fig. 5.

To make a perfect pipe-cutter, in combination with the wrench and clasp-hook, I form a curved knife or cutter, F, with a projecting back, *m*, that sets in the recess *j* of the face of the wrench.

The pipe to be cut is inserted and held by clasp-hook D and cutter F, the back *m* of which sets in the recess *j* of the stationary jaw *b*.

To insure its being held tightly, and also to follow the crease as the knife cuts the pipe, I make the screw-nut *l* of octagon shape, and form a hole, *n*, in it, in which to insert a lever to turn it, as the thumb and fingers would be insufficient at times.

If found desirable, a recess may be formed in the jaw of the clasp-hook, for receiving the dies, similar to that in the stationary jaw *b*, and either may be made like the claws of a hammer, if necessary, and the clasp-hook may be made with a tongue, instead of a fork, and set in the recess of the stationary jaw, but I prefer the manner first presented and shown in the drawings.

The clasp-hook may also have the forks combined and set over the jaws of the wrench, as shown in red lines, fig. 3, and instead of spring *k*, rubber a spring may be used in any suitable manner.

I form the hole *i* in the stationary jaw *b*, in order to arrange the claw-hook in that jaw, if desired, as shown in red lines, fig. 3, though it will hardly be found as practicable as the other way shown and described, and it is not adjustable.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The stationary jaw *b*, formed with the serrations 1, 2, 3, and 4, on its upper face, in combination with the adjustable clasp-hook *D* and openings *i* *h*, for the purpose described.

2. The angular pin *p*, and spring *k*, cast together, in combination with the hook *D*, and the jaws of a wrench, for the purpose described.

3. The opening *j*, in the face of the stationary jaw, in connection with the removable serrated block *E*, or pipe-cutter *F*, having projection *m*, for the purpose set forth.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

J. W. CLOSE.

Witnesses:

J. R. DRAKE,  
ALBERT HAIGHT.