D. FISHER.
Pipe-Wrench.

No. 203,822. Patented May 21, 1878.

Fig 1.

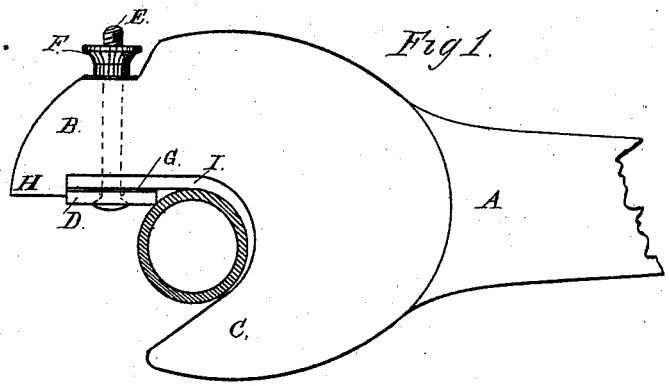


Fig. 2.

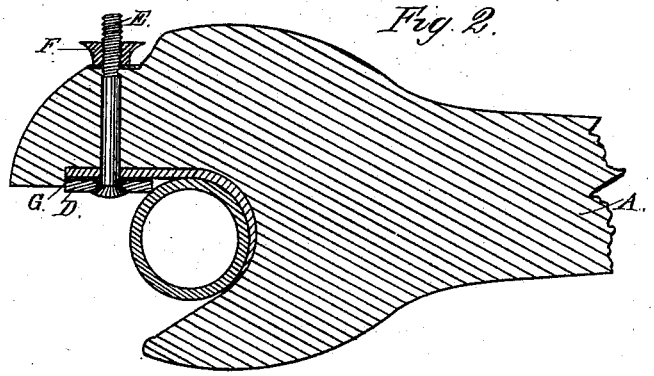
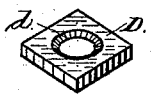


Fig. 3.



Attest:
Geo. T. Smallwood, Jr.
Walter Allen

Inventor:
Daniel Fisher.
By Knight Bros
Atty's.

UNITED STATES PATENT OFFICE.

DANIEL FISHER, OF OIL CITY, PENNSYLVANIA.

IMPROVEMENT IN PIPE-WRENCHES.

Specification forming part of Letters Patent No. **203,822**, dated May 21, 1878; application filed April 8, 1878.

To all whom it may concern:

Be it known that I, DANIEL FISHER, of Oil City, in the county of Venango and State of Pennsylvania, have invented a certain new and Improved Pipe-Wrench, of which the following is a specification:

The subject of my invention is a pipe-wrench consisting of rigid jaws, one of which has a flat surface on the inside with a projection on the end. It has also inserted in it a movable bit, so placed as to operate against the back of the pipe. The said bit is constructed with two square faces, so as to afford eight working-edges. The bit is countersunk on both sides, and is secured to the jaw by a bolt passing through a central aperture. The flat surface also forms a recess in front of the bit, into which the pipe is pressed by the other wedged-shaped jaw. It also acts as a stop for the pipe after the bit has taken its proper hold, preventing the crushing effect generally experienced with other wrenches and tongs when pipe is hard to unscrew. The recess also allows the bit to be passed over the pipe to take hold. There is also a liner placed between the bit and jaw, in case of wear of bit or the wedge-shaped jaw.

The invention further consists in combining with a wrench, constructed as set forth, a reducer to adapt it for use with pipes of various sizes.

In the accompanying drawings, Figure 1 is a side view of my improved wrench, showing a section of pipe on which it is operating. Fig. 2 is a longitudinal section of the same. Fig. 3 is a perspective view of the bit detached.

A is the body of the wrench, formed with two jaws, B C, both rigid. Within the jaw B, and bearing against a shoulder, H, is fitted a bit, D, constructed with two similar square faces, as shown in Fig. 3. The said bit has a central hole countersunk on each side, as shown at *d*, for the reception of a bolt, E, which is passed upward through the jaw B, and secured by a thumb-nut, F.

I is a reducer, perforated for the reception of the bolt E, and fitting within the recess of the jaw B, to adapt the wrench to a smaller pipe.

In practice, reducers of various thicknesses, or in any desirable number, are employed to adapt the wrench to fit as many different sizes of pipe as may be requisite.

My improved wrench operates from the back of the pipe, instead of the front, as in the case of most wrenches. When it is applied the bit D passes over the top or bottom of the pipe to the rear side thereof, and rests on the pipe. On pressing down or raising up the handle, the wedge-shaped jaw C pushes the pipe against the bit D, causing it to cut into the pipe, as shown in the drawing, giving an effective hold for turning. The pipe cannot be crushed, because the face of the jaw B within the recess rests on the pipe after the bit has taken its proper hold.

It will further be seen that the action is such as to cause the bit to press square across the top of the pipe. On raising the handle to take a new hold, the bit is immediately thrown off the pipe, which avoids the dulling effect which is common in other wrenches of ordinary construction.

The bit is of steel, and is made square to suit different wrenches. Its four bottom edges may be used in succession, as one after another becomes dull. It is then turned over, and four new edges are provided. When all are dull, the bit is placed flat on a grindstone and ground. It is then lined up from the back with a liner, G, of tin or other metal, equal to the thickness of the metal ground off; or, in case of wear of the wedge-shaped jaw C, it is similarly lined up.

The reducer I is introduced when required to adapt the wrench to a smaller pipe. Thus, for example, a wrench suitable for a half-inch pipe may be adapted to a three-eighth-inch pipe by the introduction of a reducer of about the proportions illustrated in the drawing.

The reducers are made to reduce to all necessary sizes. Where the reduction is large—as, for example, from five inch to three inch—the reducer is made accordingly, and also the depth of the shoulder H, against which the bit D bears.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The pipe-wrench constructed with rigid

jaws B C and a reversible bit D, bearing against a shoulder, H, and secured by a bolt, E, all substantially as described.

2. The combination of a wrench-stock, A B C, the removable bit D, the bolt F for securing the bit to the jaw, and the liner G, as described.

3. The combination of the stock A B C, bolt E, bit D, and reducer I, as and for the purpose described.

DANIEL FISHER.

Witnesses:
JNO. J. B. FINK,
C. FOLEY.