M. S. CLARK.

Pipe-Wrench.

No. 164,075. Patented June 8, 1875.

Fig. 1.

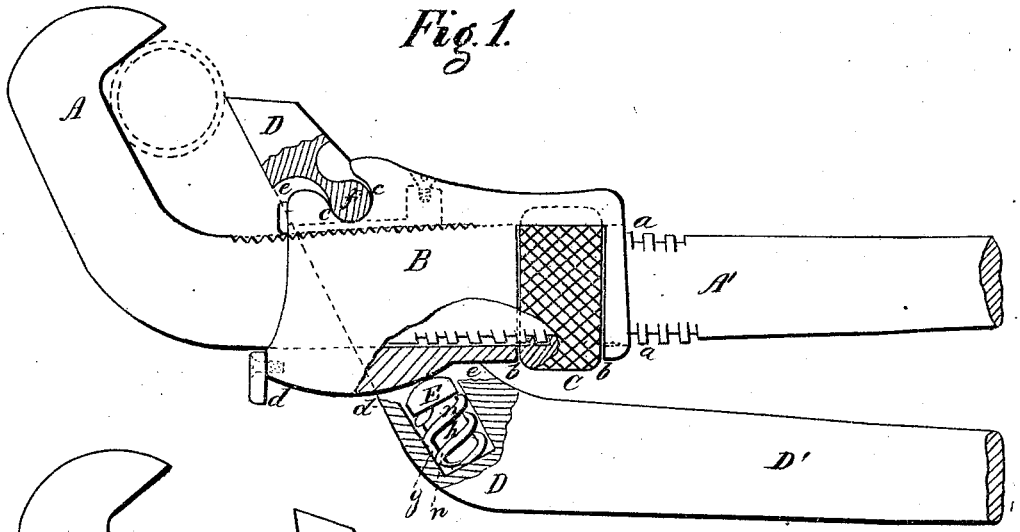
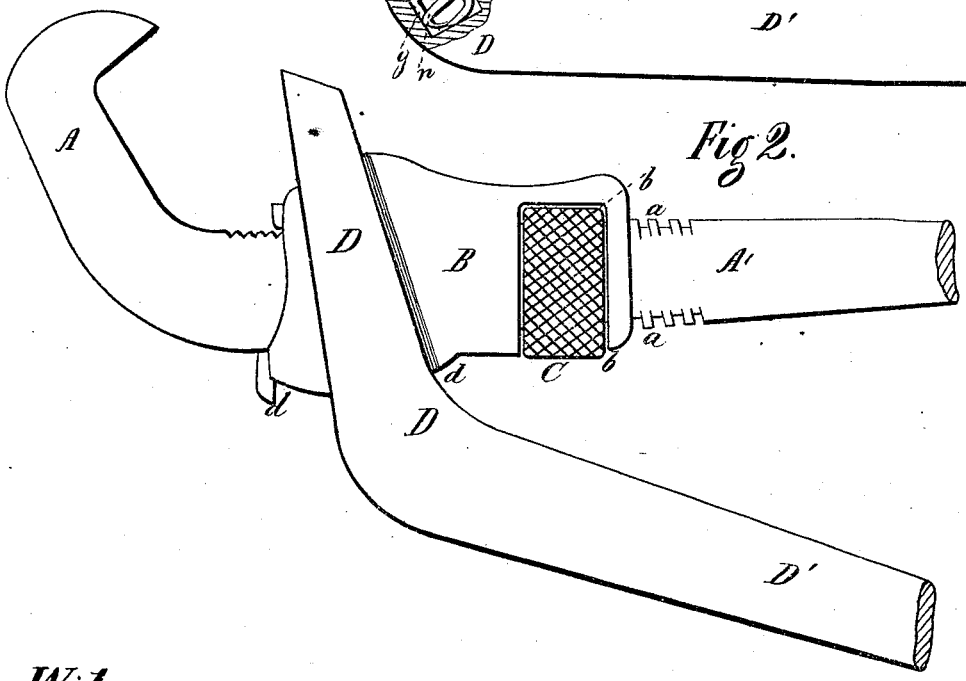


Fig 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

MINFORD S. CLARK, OF NEW YORK, N. Y.

IMPROVEMENT IN PIPE-WRENCHES.

Specification forming part of Letters Patent No. **164,075**, dated June 8, 1875; application filed March 26, 1875.

To all whom it may concern:

Be it known that I, MINFORD S. CLARK, of the city, county, and State of New York, have invented certain Improvements in Pipe-Wrenches, of which the following is a specification:

This invention relates to that class of implements commonly termed pipe-wrenches, and used for giving an axial movement to pipes, round rods, &c., in the various operations of plumbing and the like.

The invention comprises a novel combination of a peculiarly-constructed slide carrying the movable jaw of the wrench, a screw-threaded shank carrying the fixed jaw thereof, and a nut or collar actuating the aforesaid slide, whereby a firm and strong connection of the two jaws is secured, and whereby the wrench is rendered easily adjustable to different sizes of pipes, &c.

The invention further comprises a novel combination of parts, whereby the steady movement of the jaws in relation to each other is provided for, without the great expense of manufacture involved in securing this result by closely accurate workmanship or close fitting of the parts.

Figure 1 is a side view and partial longitudinal section of a pipe-wrench made according to my invention, showing the same as closed upon a pipe to turn the same. Fig. 2 is a side view, showing the wrench as opened preliminary to application to the pipe.

A is the hook or fixed jaw of the wrench, and A′ is the shank thereof, the said shank forming one of the lever-handles of the implement. The innermost portion of the shank A′ has a sectional screw-thread, *a*, formed upon its inner and outer edges, the sides or lateral surfaces of the shank being flat. B is a sleeve or slide provided upon the shank A, and having at its rear or outer end the milled nut C placed upon the screw-threaded portion of the shank, and so arranged within the cavity *b* at the rear end of the slide that the turning of the nut in one direction or the other will give a longitudinal movement to the slide, to or from, as the case may be, the hook or fixed jaw A. At the inner edge of the forward or inner end of the slide B is formed a semicircular socket, *c*, extending clear across from side to side. At the outer side or back of the slide the latter is made arc-shaped, as shown at *d*, the arc being concentric with the socket *c*, as shown more fully in Fig. 1. D is the sharp-edged jaw, and D′ the lever-handle thereof, the jaw being slotted, as shown at *e* in Fig. 1. At the outer end of the slot *e* is formed a nearly-cylindrical shoulder or bearing, *f*. The jaw D is slipped upon the inner end of the slide B, the latter passing into and through the slot *e*, with the shoulder *f* inserted in the socket *c*. The jaw D at the opposite or outer end of its slot *e* has a recess, *g*, in which is placed a block, E, which has a stem, *h*, surrounded by a spiral spring, *n*, which forces the block E outward against the arc-shaped surface *d*, with a pressure proportioned to the strength and compression of the spring.

In the use or operation of the implement the nut C is turned to bring the jaw D nearer to or farther from the fixed jaw A, according to the diameter of the pipe to be operated upon. The pipe is then griped by and between the two jaws in the ordinary manner by bringing the two lever-handles of the implement toward each other; but in doing this the pivotal movement of the jaw A is upon and around the shoulder *f*, working in the socket *c*, the jaw A being steadied in its movement by the pressure of the block E upon the arc-shaped surface *d*.

It will be seen that by this connection of the jaw A to its support the usual pin or pivoting-bolt is done away with, and a stronger and firmer pivotal support given to the moving jaw. It is also manifest that if the moving jaw were thus connected direct to the jaw A, instead of to the slide B, the pivotal movement of the jaw D would remain the same, less its adjustability upon the shank of the jaw A, which latter enables the greater strength of the connection to be availed of in turning pipes of larger diameter than, under ordinary circumstances, it will be required to operate. It is also evident that by fitting the adjacent end of the slot *e* snug to the arc-shaped surface *d*, a certain measure of steadiness would be secured to the jaw D in its movement irrespective of the pressure-block; but the expense of manufacture and liability to injury and derangement would be materially in-

creased, and the utility at the best would be much inferior to that secured through the agency of the pressure-plate.

What I claim as my invention is—

1. The slide B, constructed with the socket *c* and arc-shaped surface *d*, in combination with the screw-threaded shank of the jaw A, the nut C, and movable jaw D, constructed with the shoulder or bearing *f*, substantially as and for the purpose set forth.

2. The spring-actuated pressure-block E, in combination with the slide B, constructed with the arc-shaped surface *d* and socket *c*, the screw-threaded shank of the fixed jaw A, the nut C, and movable jaw D, constructed with the shoulder or bearing *f*, the whole arranged for operation substantially as and for the purpose set forth.

MINFORD S. CLARK.

Witnesses:

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