S. W. HUDSON.

Pipe-Wrench.

No. 212,468. Patented Feb. 18, 1879.

Fig. 1.

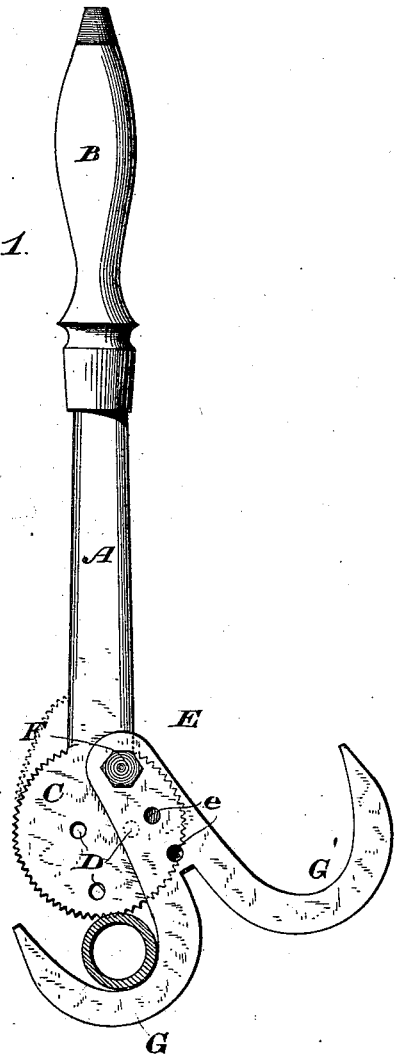
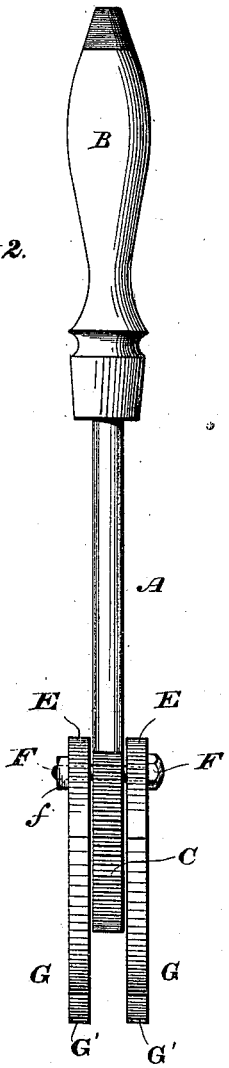


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

SAMUEL W. HUDSON, OF HUDSONDALE, PENNSYLVANIA.

IMPROVEMENT IN PIPE-WRENCHES.

Specification forming part of Letters Patent No. **212,468**, dated February 18, 1879; application filed January 14, 1879.

To all whom it may concern:

Be it known that I, SAMUEL W. HUDSON, of Hudsondale, in the county of Carbon and State of Pennsylvania, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification:

My invention relates to improvements in pipe-wrenches of the class provided with a single shank or handle, the inner end of which performs the function of the corresponding end or jaw of one of the handles of the commonly-employed tongs, and having an adjustable jaw or clamp acting in connection with the end of the shank or handle to perform the work of that class of implements known as "pipe-tongs."

My objects are to provide a strong and cheap pipe-wrench, and one which can readily be adjusted to suit it for efficient work in connection with pipes of varying sizes, ranging from the smallest gas-pipe up to the largest pipe upon which plumbers, gas-fitters, and machinists are likely to employ the wrench.

The subject-matter claimed will hereinafter specifically be designated after first fully describing my improvements with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved wrench, showing it as clamping a section of pipe; and Fig. 2, an edge elevation or longitudinal view, showing the wrench as turned a quarter-way round, or at a right angle to the position in which it is shown by the preceding figure.

The shank A is provided with a lever-handle, B, and made of suitable material, as wrought-iron, cast-steel, &c. The shank at its inner end, or that opposite the handle, terminates in, and preferably in one piece with, a serrated disk or circular piece, C, having a roughened or toothed edge, and constituting the fixed jaw of the wrench. This jaw C may be made separately from the lever or handle shank, if desired, and firmly attached in place in suitable manner, so as to admit of the renewal of the jaw.

A series of holes, D, is provided through the circular jaw or disk end C, for the attachment, eccentrically thereto, of a movable jaw by its short arm or shank E. In this instance there are four holes, D, in the fixed jaw, eccentric thereto, and out of line with the longitudinal center of the handle-shank, in the upper one of which holes the movable-jaw shank is pivoted by its removable pivot, shown as consisting of a headed bolt, F, with a threaded end and securing-nut, *f*.

The movable jaw shown is two-part, or made in two similar parts, each having a series of holes, *e*, (in this instance three in number,) in its arm or shank E, and with two hooks, G and G′. A one-part jaw may be used; it would answer but indifferently well, however, and I prefer two always. The holes *e* in the shanks of the opposite parts of the jaw come in line with each other and receive the pivot-bolt F, and the hooked ends G and G′ of each part of the jaw are brought opposite each other, or occupy positions which bring the jaw-hooks G and G′, respectively, side by side at a distance apart equal to or slightly greater than the thickness of the shank-disk end or fixed jaw C.

The movable jaw or each part thereof may have but a single hook, and in some cases, as where a very wide range of adjustment is not sought, would answer well. I do not wish, therefore, to be considered as confining my invention to the movable-jaw shank having two hooks, G and G′, nor to the precise details of construction shown by the drawings, though there is an obvious advantage in providing the shank with the different-sized hooks projecting away from each other and from opposite sides of the shank.

The wrench illustrated by the drawings is susceptible of twenty-four adjustments or combinations, to suit it for operation on pipes of a much greater number of sizes, for each adjustment obviously enables the wrench to be used upon pipes of slightly-varying sizes. The number of adjustments may be increased or diminished somewhat without any material alteration of my invention.

It should be noticed that the two parts of the movable jaw, being connected at their pivot only, are free to swing about the fixed jaw without obstruction from the handle-shank.

In operation, if a pipe of from a very small to, say, a medium size is to be clamped by the wrench, the small hooks G are adjusted to the pipe, (see Fig. 1,) the pivot-bolt having been placed in the proper holes, D and *e*. If a

larger-sized pipe is to be clamped, the hooks G′ are adjusted to the pipe. The two sets of hooks G and G′, it will thus be seen, always enable the wrench to be adjusted to pipes of sizes considerably varying without changing the pivot, which, as before remarked, enables twenty-four adjustments to be made, twelve for each set of hooks G G′.

Instead of being of regular circular form or of uniform curvature throughout, the fixed jaw may be modified as to shape somewhat, as shown by the dotted line at the disk-top on one side of the shank in Fig. 1. In this way a wider range of adjustment is attained, and the implement is adapted to be used upon pipe in narrow or partially-inclosed spaces with the handle projecting in different positions to suit the circumstances.

By employing a fixed jaw, C, circular throughout, or nearly so, a very wide range of adjustment is attained by means of the eccentrically-pivoted movable jaw, the shank E of which is of such length as to adapt the implement for engaging a pipe anywhere (according to the size of the pipe) throughout the entire circumference of the fixed jaw. By thus providing a large working-surface, extending from one side of the handle-shank to the other, rapid wear is prevented.

I claim as of my own invention—

1. The combination of the handle-shank provided with the fixed jaw C, of the form described, and the movable jaw eccentrically pivoted by its short shank to the fixed jaw, and acting in connection therewith to grasp a pipe at any point throughout the periphery of the fixed jaw, or on either side of the handle-shank, thus affording a wide range of adjustment, and adapting the implement for use upon pipe varying considerably in size, as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the handle-shank having the fixed jaw and the two-part movable jaw made in independently-adjusting parts, connected with each other only by the pivot which secures them to the fixed jaw.

3. The wrench-handle shank having the circular fixed jaw C, with a working-surface extending entirely around it from one side to the other of its shank, and provided with the series of eccentrically-arranged holes D, as and for the purpose set forth.

4. The movable jaw for wrenches, consisting of the short shank E, provided with the series of holes *e* and the two hooks G G′, of different sizes, projecting from the shank in opposite directions, substantially as and for the purpose hereinbefore set forth.

5. The movable jaw for wrenches, made in two parts, unconnected with each other, and provided with the different-sized hooks G G′ and the adjusting-holes in their shanks E, substantially as hereinbefore set forth.

6. The combination of the circular fixed jaw of the handle-shank, the two-part movable jaw composed of the two doubly-hooked independent shanks E, and the pivot by which said shanks are adjustably and eccentrically secured to the fixed jaw, substantially as hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

SAML. W. HUDSON.

Witnesses:
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