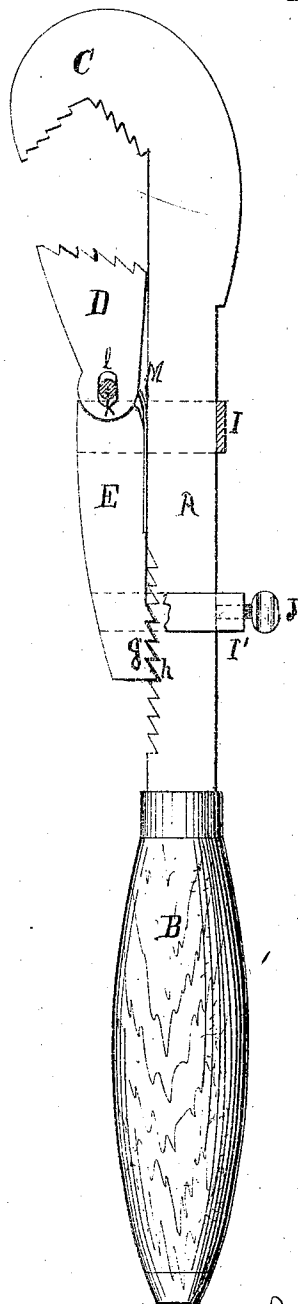


A. P. Lord.
Wrench.

118141

PATENTED AUG 15 1871



Witnesses:

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UNITED STATES PATENT OFFICE.

ALLEN P. LORD, OF FRIENDSHIP, NEW YORK, ASSIGNOR TO HIMSELF AND
JAMES E. WISNER, OF SAME PLACE.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. 118,141, dated August 15, 1871.

To all whom it may concern:

Be it known that I, ALLEN P. LORD, of Friendship, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Wrenches; and I declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which the figure is a side elevation of my improved wrench, partly in section.

My invention has for its object to improve the construction of pipe and other wrenches; and to this end it consists in the combination, with the adjustable bar of the wrench, of the swinging jaw, which is constructed with a slot to fit upon its pivot or pintle for the purpose of relieving the latter of all strain when the wrench is in operation, and of a flat spring, which is connected to said bar in such a manner as to hold the slotted jaw either open or closed, as will be hereinafter more fully described.

In the accompanying drawing, A is the shank of the wrench, terminating, at one end, in the handle B, and having a hooked jaw, C, formed upon its opposite end. The inner face of this jaw is made right angular, or nearly so, and provided with teeth or serrations, as shown. D is the swinging jaw, made triangular in shape, with teeth or serrations across its upper end, opposite the teeth in the jaw C, and pivoted at its lower end to the upper end of a sliding block or short bar, E. Upon the edge of this bar, near its lower end, is formed a series of teeth, *g*, adapted to engage with teeth *h*, made in a reverse position upon the shank, as shown in the drawing. I I' are clasps passing around the shank from the sliding bar and fitting sufficiently loose upon the former to admit of the latter being moved freely thereon.

To operate the devices thus far described the set-screw J, passing through the clasp I', is employed to admit of the bar and swinging jaw being adjusted to clamp a nut or pipe between such jaw A and the hooked jaw C. The wrench is then turned in the direction of the arrow, the serrations of the jaws preventing their turning upon the pipe or nut, and the interlocking teeth *g h* of the shank A and bar E preventing the displacement of the latter.

The weakest point in all wrenches in which swinging clamping-jaws are employed is at the

pivot of said jaws, which must also sustain the greatest strain. The result is that such pivots soon become worn or broken out, rendering the wrench, for the time being, worthless.

The first part of my invention consists, as previously stated, in relieving the pivot of all strain in order to overcome this difficulty, and is accomplished by extending the clasp I somewhat above the end of the bar E, upon opposite sides, forming a socket for the end of the swinging jaw. The pivot *k* passes through these clasps, as shown, and also through an oblong slot, *l*, formed in the jaw, as shown in the drawing. By this construction, when the jaw is in contact with the object to be turned its lower end bears against the end of the bar E, and not upon the pivot, so that the pressure upon the latter is transferred to the bar. The position of the oblong slot permits the longitudinal movement of the swinging jaw, but prevents its displacement laterally. Inasmuch as the jaw E swings freely upon the pivot, it is liable to fall, by its gravity, either away from or against the shank, according to the position of the wrench, and interfere with its application to the object to be clamped. To avoid this objection the second part of my invention is designed, which consists in interposing a flat spring, M, between the jaw A and shank, and secured to the inner edge of the sliding bar E in such a manner that its free end shall bear against the jaw on a line with or a little below the pivot, and when turned outward against the lower end of the jaw, as shown in the drawing by dotted lines. By this arrangement the jaw is held open or closed against casual displacement.

If desired the set-screw J may be replaced by a wedge-spring or other equivalent device.

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

In combination with the adjustable bar E, the jaw D, when connected to said bar by the slot *l* and pivot *k*, and the spring M when connected to the bar E, as described, to hold the slotted jaw either open or closed, as herein shown and described, for the purpose specified.

ALLEN P. LORD.

Witnesses:

J. E. WISNER,
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