No. 696,659. Patented Apr. 1, 1902.

M. S. THOMAS.

ADJUSTABLE NUT AND PIPE WRENCH.

(Application filed July 26, 1901.)

(No Model.)

Fig. 1.

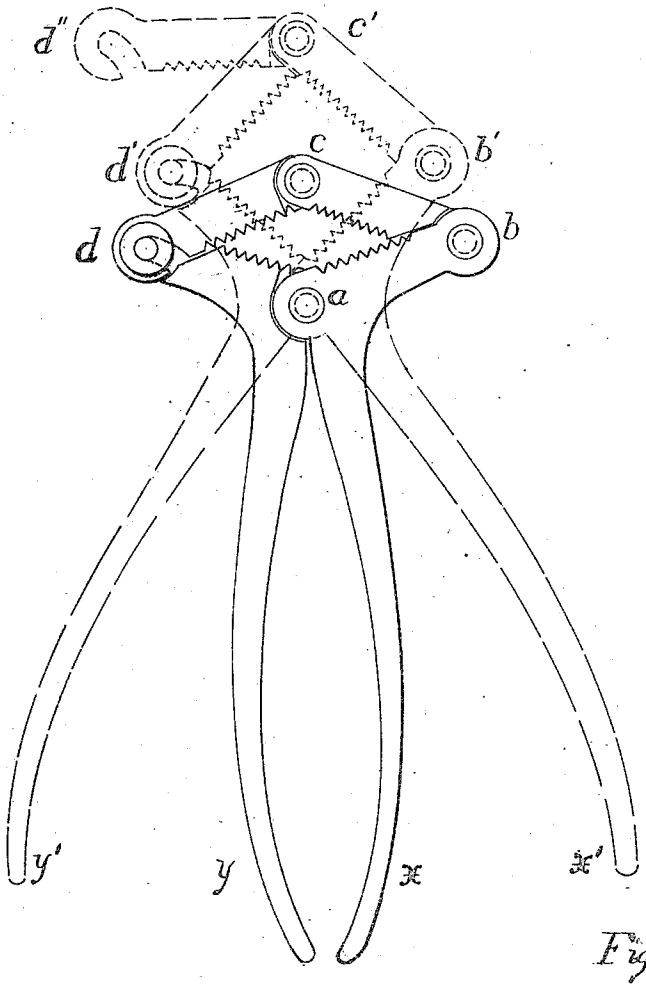


Fig. 2.

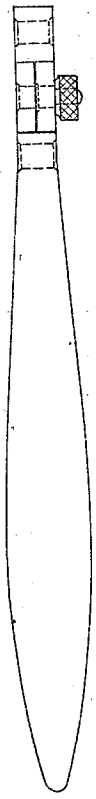


Fig. 5.

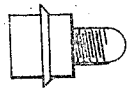


Fig. 3.

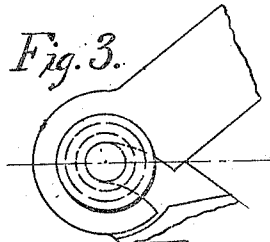
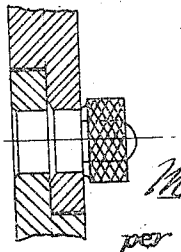


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

MERTON S. THOMAS, OF ITHACA, NEW YORK.

ADJUSTABLE NUT AND PIPE WRENCH

SPECIFICATION forming part of Letters Patent No. 696,659, dated April 1, 1902.

Application filed July 26, 1901. Serial No. 69,813. (No model.)

To all whom it may concern:

Be it known that I, MERTON S. THOMAS, a citizen of the United States, residing at the city of Ithaca, in the county of Tompkins and State of New York, have invented a new and useful Quick Adjustable Nut and Pipe Wrench, of which the following is a specification.

My invention relates to improvements in nut and pipe wrenches in which a cheaper constructed and more useful wrench is attained. Heretofore it has been proposed to construct wrenches which are regulated to fit different size nuts and pipes to which they are applied by means of a threaded thumb-screw or by a chain, a slow process. It will be readily seen that these objections are entirely removed in my invention from the fact that it is only necessary to press the handles or long lever-arms of my device together after attaching to the nut or pipe, when the jaws or compound rivet-jointed levers with milled or slightly-roughened edges will find their own adjustment instantly to nut or pipe of any size or shape, and the jaws will securely retain their hold or grip without force being applied by hand-pressure to hold them together, and it is only necessary to push or pull the lever-handles to turn the nut or pipe after the grip is once secured.

My wrench is much more cheaply manufactured than others, inasmuch as but two dies only are necessary to make any part except the adjustable thumb-screw and rivets, and the entire wrench may thus be drop-forged.

The novelty in the present invention resides in the peculiarities of construction of the wrench, as will be more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

I attain the foregoing objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical flatwise view of the complete device. Fig. 2 is a vertical edgewise view of the same, showing the adjustable thumb-screw at the side near the top; Fig. 3, an enlarged portion of the lever-joint and thumb-screw head, which may be detached and thrown back by loosening the thumb-screw in order to attach the wrench to any pipe and again securely attached and locked by the thumb-screw being tightened; Fig. 4, a vertical cross-section of Fig. 3, showing the manner of the construction of the rivet or shoulder-bolt to which the jointed detachable lever is locked and the construction of the countersunk form of the rivet and inner edge of the hook in the movable lever-arm through which it passes before being locked. Fig. 5 is a shoulder-bolt enlarged, to which the thumb-nut is attached, as shown in Fig. 4.

Similar letters refer to similar parts throughout the several views.

In Fig. 1 is illustrated the device both closed and opened, the latter condition being indicated by the outline of broken lines. The device consists of the lever arms or handles $x\ y$, terminating at the points $d\ b$ and joined together at a with a rivet-joint put together with a shoulder bolt or rivet to give strength to the joint and prevent binding when riveted or bolted. At the points d and b are attached the two compound jointed levers $b\ c$ and $d\ c$, joined at the points d and b by shoulder-bolts or rivets. The inner jaws between these points are slightly milled or roughened. The broken lines $d'\ c'\ b'$ in Fig. 1 show the device open to its full extent for the reception or introduction of the pipe, and the open lever-arm $d''\ c'$, terminating in a hook, indicates the manner of opening the device in order to adjust it to the pipe, after which it is locked, as at d, and secured firmly by threaded thumb-screw at a, the latter being shown in Fig. 2.

When the pipe is introduced into the wrench while open, as in d', c', b', x', and y', the long lever-arms of the wrench $x'\ y'$ are closed by the hands, as at $x\ y$, and the compound jointed levers assume the position $d\ c\ b$, firmly gripping the nut or pipe and perfectly and quickly adjusting themselves thereto.

Fig. 3 is an enlarged section of the rivet-joint, showing the hook end of the adjustable lever-arm $d\ c$ in place after the wrench has been attached to the pipe.

When the wrench is made for a pipe-wrench only, it is not necessary to manufacture it with the thumb-screw to lock it; but when used as a pipe and nut wrench it should have the lock. I therefore claim the right to manufacture it either way.

I do not wish to be confined to any particu-

lar method in manufacturing the above pipe and nut wrench so long as I do not depart from the general principle thereof. I may conclude to make a link-joint at *a* in Fig. 1, so as to cause the wrench to conform and engage without hand-pressure to dented, bruised, and uneven surfaces of pipe, and I claim the right to manufacture and sell the wrench with or without the link-joint.

What I claim in my invention as new, and desire to have protected by Letters Patent, is—

1. A pipe and nut wrench composed of two long compound levers, *x b c* and *y d c*, with notched jaws joined together at *a* and *c*, with shoulder-bolts, in combination with two short compound levers, *b c* and *d c*, with notched jaws, joined together with shoulder-bolts, the end of one, *d c*, being formed into a countersunk hook with shoulder-bolt, in combination with lock-nut, to engage the same, substantially as shown in Fig. 1, and described.

2. The pipe and nut wrench described, composed of a combination of the four compound levers *x b*, *b c*, *y d*, and *d c*, having inner notched jaws, one of which, *d c*, is formed into a countersunk hook to engage a shoulder-bolt having a thumb-nut at *d*, to lock the same, all in combination, and joined together with shoulder-bolts at *a b c* and *d*, substantially as shown.

3. A combination in a pipe and nut wrench having four compound jointed levers with roughened inner edges, two long and two short, one of the latter provided with a detachable hook, together with a shoulder-bolt having a shoulder formed to engage a countersunk hook, in combination with a thumb-nut threaded thereon, to adjust the same, all in combination, and joined together with shoulder-bolts at the points, *a*, *b*, *c*, and *d*, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MERTON S. THOMAS.

Witnesses:
E. A. WAGENER,
A. E. BALL.