(No Model.)

L. P. DAVIDSON.

WRENCH.

No. 513,308. Patented Jan. 23, 1894.

Fig. 1.

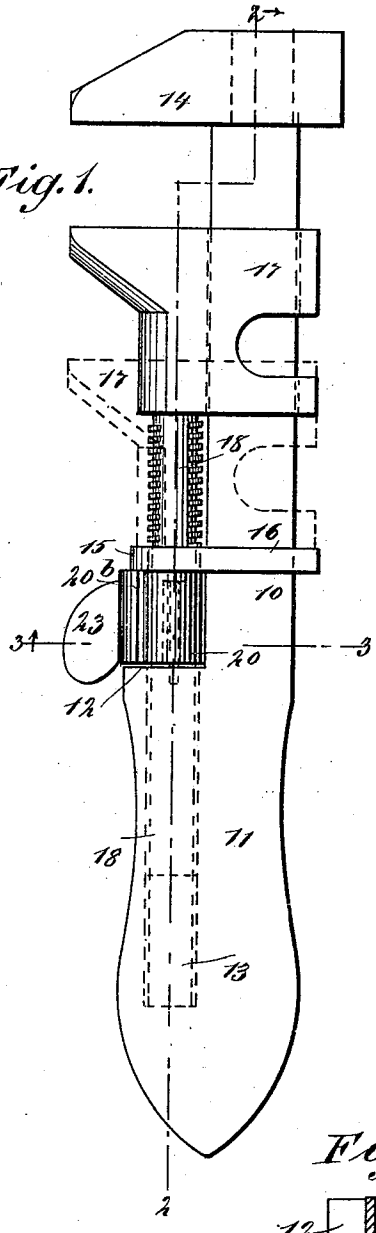


Fig. 2.

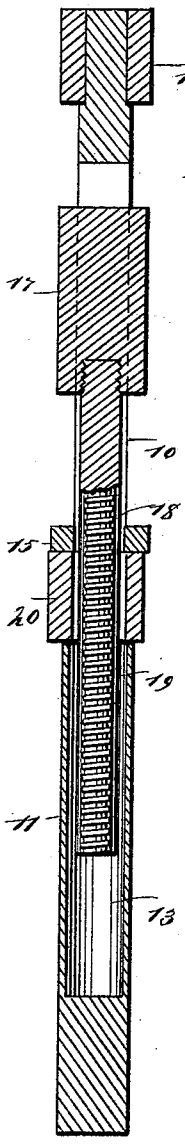
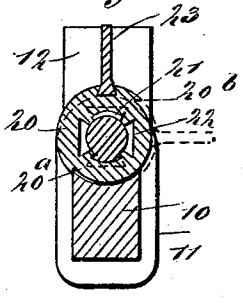


Fig. 3.



WITNESSES:

M. W. Twitchell.

C. Sedgwick

INVENTOR

L. P. Davidson

BY

ATTORNEYS.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS PETTY DAVIDSON, OF OWEN, WYOMING.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 513,308, dated January 23, 1894.

Application filed July 17, 1893. Serial No. 480,746. (No model.)

To all whom it may concern:

Be it known that I, LEWIS PETTY DAVIDSON, of Owen, in the county of Albany and State of Wyoming, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wrenches, and it has for its object to provide a wrench which will consist of but few parts, and in which all of the parts will be exceedingly simple and durable in construction, and further to provide a wrench in which any part may be duplicated, and to so assemble the parts of the wrench that a quick and convenient adjustment of its jaws may be effected to fit nuts, or other articles of different sizes, and whereby also a firm yet simple and reliable locking device will be employed for locking the jaws in their adjusted position.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the wrench. Fig. 2 is a longitudinal section, taken practically on the line 2—2 of Fig. 1; and Fig. 3 is a transverse section taken essentially on the line 3—3 of Fig. 1.

In carrying out the invention the body of the wrench consists of a shank 10, which is rectangular in cross section, and a handle 11, which while it is attached to the shank in some cases, is preferably made integral with it, and the said handle is wider than the shank, it being made to extend beyond the front face of the shank a predetermined distance, forming thereby an offset 12.

In the offset of the handle a chamber 13, is formed, the chamber extending downward in the body of the handle, as shown in dotted lines, Fig. 1, and in the section in Fig. 2.

At the upper end of the shank a fixed jaw 14, is secured in any approved manner, the said fixed jaw extending beyond the front face of the shank, and it stands at right angles to said face. An apertured guide lug 15, is projected from the front face of the shank a predetermined distance above the offset 12 of the handle, and the lug 15, is preferably made integral with a band 16, which encircles the shank and is adapted to constitute a rest for the sliding jaw 17 of the wrench, when said jaw is in its lowest position, or is farthest removed from the fixed jaw.

The sliding jaw is provided in its body portion with an aperture extending through from top to bottom, which aperture or opening corresponds in cross section to the cross section of the shank, as the shank is made to pass through the opening, and the jaw is adapted to have free movement on the shank; therefore the opening is larger than is absolutely necessary to accommodate the shank. The lower jaw is provided with an adjusting rod 18, which rod is preferably screwed into the bottom surface of the jaw projecting beyond the front face of the shank, so that in the event the adjusting rod should become broken or unfit for service it may be readily removed and another substituted. The rod 18 is circular in cross section, as shown in Fig. 3, and is provided upon diametrically opposite faces with a thread 19, the thread extending from a point at or near the bottom to a point at or near the top. Thus in cross section it will be observed that two opposite faces of the rod are threaded, while the other two faces are plain or smooth. When the lower jaw is upon the shank the adjusting rod 18 is passed down through the apertured guide lug 15 into the chamber 13 of the handle, but before it is passed into the chamber 13 the adjusting rod is made to pass through a lock nut 20, which lock nut is held to turn between the lug 15 and the offset 12 of the handle, and the front face of the shank between these points is concaved, as shown in Fig. 3.

The adjusting nut 20, is provided with a bore extending through it, and in diametrically opposite sides of the bore threads 21, are produced, while in the other two opposing sides recesses 22, preferably of a dove-tail shape, are formed, as is likewise shown in Fig. 3. One side of the adjusting nut is recessed from top to bottom, and the said recess extends substantially half-way around the nut, forming thereby two longitudinal shoulders designated in the drawings as 20^a and 20^b, the recessed face of the nut being made to face the concaved portion of the shank;

and the nut is further provided with a lip 23, secured upon its outer face, preferably nearer one of the shoulders than the other.

In the operation of the wrench, when the nut is turned, by pressing against the lip 23 in such manner that the lip will be carried over in direction of the right-hand side of the body, for example, the shoulder 20^b will be brought into engagement with the right-hand front edge of the shank, and as shown in dotted lines in Fig. 3 the lip will stand at right angles to the side of the shank, and the recesses 22 in the lock nut will be brought opposite the threaded surfaces of the adjusting rod, and the lower jaw may then be carried upward or downward to adjust it to the object it is adapted or desired to grip, and when the adjustment is accomplished the nut is turned in an opposite direction until its left-hand shoulder 20^a strikes against the left-hand forward edge of the shank, as shown in positive lines in Fig. 3, and at that time the lip 23 will be immediately in front of the shank. When the lock nut is turned in the latter direction, its threaded surface will engage with the threaded surface of the adjusting rod, and the lower jaw will be prevented from moving in any direction.

It will be observed, as heretofore stated, that the wrench is exceedingly simple, durable and economic in its construction, and that it is capable of being adjusted expeditiously and conveniently, and that owing to the shoulders 20^a and 20^b on the lock nut, the distance that the nut must turn can not be miscalculated.

I am aware that it is not new to cut horizontal threads upon the adjusting rod; but the threads on the rod 18 substantially convert the rod into a left hand screw, and when the lip 23 is turned to the left, it causes the nut 20 to perform the double function of locking the lower jaw in position and also that of crowding the lower jaw upward.

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

1. A wrench, the same consisting of a shank having an offset at its inner end, a jaw fixed upon its outer end, a sliding jaw located upon the shank, a guide carried by the shank, an adjusting rod secured to the lower jaw, provided with broken threads upon opposing faces, and a lock nut held to turn between the offset and guide of the shank, the said lock nut being provided with a bore having diametrically opposing recesses produced in its wall, and provided with threaded surfaces between the recesses, the lock nut being further provided with stops limiting its movement, as and for the purpose specified.

2. In a wrench, the combination, with a shank, a handle forming a portion of the shank and provided with an offset at the front face of the shank, the offset portion of the handle having a chamber produced therein, and a jaw fixed upon the outer end of the shank, of a jaw held to slide upon the shank, a guide secured upon the shank above the offset of the handle, an adjusting rod removably attached to the sliding jaw, said rod being provided with a broken thread upon opposing faces, the rod being passed through the guide and into the handle chamber, and a lock nut located between the guide and the offset of the handle and through which the adjusting rod passes, the said lock nut being capable of turning and being provided with shoulders upon opposite faces, forming stops, the bore through which the adjusting rod passes being provided with recesses in opposing surfaces, the surfaces between the recesses being threaded, as and for the purpose set forth.

LEWIS PETTY DAVIDSON.

Witnesses:
JOHN PRATLEY,
E. E. VAN ORTWICH.