(No Model.)

S. M. FRIEDE.

WRENCH.

No. 564,513. Patented July 21, 1896.

Fig. I.

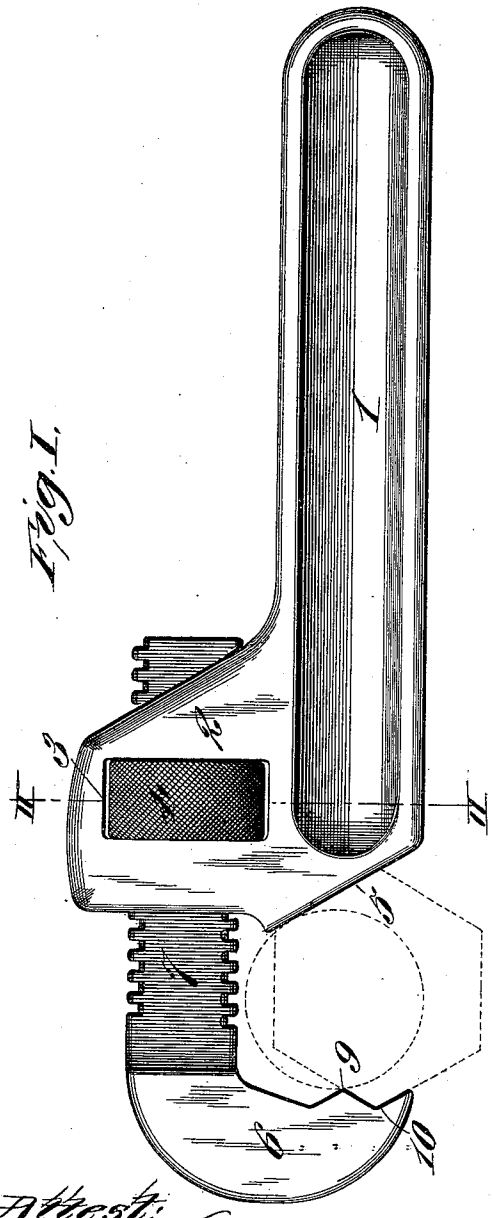


Fig. III.

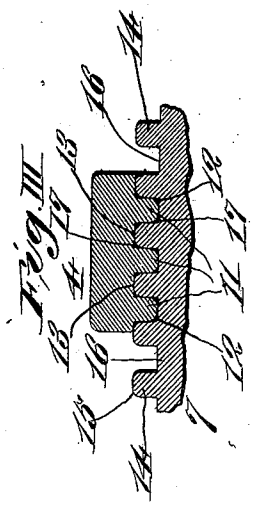
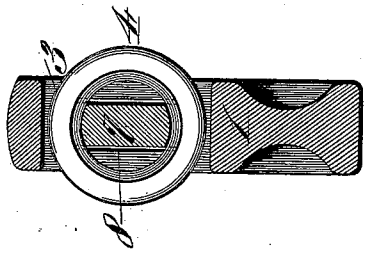


Fig. II.



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UNITED STATES PATENT OFFICE.

SAMUEL M. FRIEDE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-THIRD TO JOHN W. DONNELL, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 564,513, dated July 21, 1896.

Application filed September 19, 1895. Serial No. 562,965. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. FRIEDE, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My present invention relates to an improved wrench that may be used either as a pipe or nut wrench, and when used upon a nut it will "ratchet" the same as when used upon a pipe.

My invention further relates to forming the threads on the shank of the movable jaw of the wrench and upon the adjusting-nut in a manner that reduces the friction to a minimum and provides against abrasions of the exposed corners of the threads on the shank.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I is a side view of my improved wrench. Fig. II is a section taken on line II II, Fig. I. Fig. III is an enlarged detail section.

1 represents the handle or body portion of the nut, the head 2 of which has an opening 3 to receive the adjusting-nut 4. The inner corner of the head end of the handle is removed, forming a flat inclined surface 5, that bears against one side of the nut or pipe when the wrench is in use.

6 represents the movable jaw of the wrench, having a threaded shank 7, fitting in a socket 8 in the head 2 of the handle. The inner or working face of the jaw 6 is provided with but a single operative tooth or point 9, formed by making a single notch 10 in the outer part of the inner face of the jaw. When the wrench is used on a pipe, the point 9 acts in connection with the face 5 to nip the pipe, and when the wrench is used on a nut the notch 10 acts in connection with the face 5 to take hold of the nut. The single large point 9 acts to take a firm hold of the pipe, and its action is not interfered with by other points or teeth, and the deep notch 10 takes a good hold of one corner of a nut.

The thread 11 of the adjusting-nut 4 is made with straight parallel sides and with rounded corners 12. The groove between the flights of the thread has a flat bottom 13. The thread 14 of the shank 7 has straight parallel sides with rounded corners 15, and the grooves between the flights of the thread also have flat bottoms 16. This arrangement of threads and grooves leaves spaces 17 between the corners of the threads and the bottoms or bases of the grooves for dirt to work into, and from which the dirt may be removed as occasion requires, so that the friction between the adjusting-nut and the shank of the movable jaw is reduced to a minimum.

I claim as my invention—

In a wrench, a movable jaw having a threaded shank and an adjusting-nut fitting over said shank, the threads of said shank and nut being formed with straight parallel sides and rounded corners, and the bases of the grooves between the threads being formed flat, substantially as and for the purpose set forth.

SAMUEL M. FRIEDE.

In presence of—
E. S. KNIGHT,
N. FINLEY.