

(No Model.)

A. ANDERSON.
WRENCH.

No. 504,698.

Patented Sept. 12, 1893.

Fig. 1.

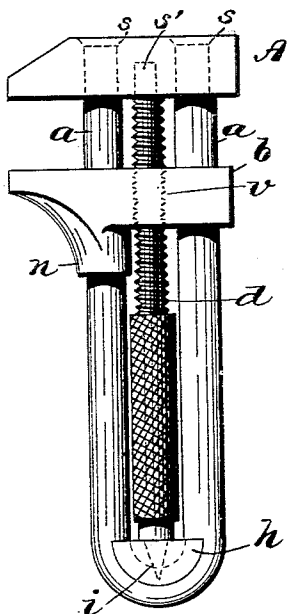


Fig. 2.



Fig. 3.

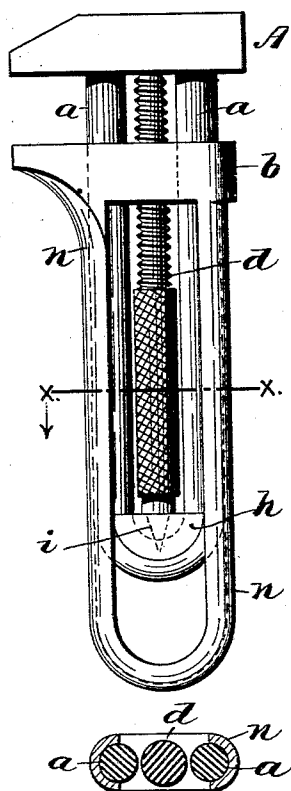


Fig. 4.

Witnesses

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To all whom it may concern:

Be it known that I, AXEL ANDERSON, of Attleborough, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This improvement relates to that class of wrenches especially designed for bicycle use. It is an improvement on the invention disclosed in my United States Patent No. 498,348, dated May 30, 1893. It is fully illustrated in the accompanying drawings.

Figure 1 represents a side elevation of the wrench partly open. Fig. 2 shows a back elevation. Fig. 3 is a view of the same as Fig. 1 with an extension of the inner jaw to lengthen the handle. Fig. 4 is a cross section of the wrench as shown in Fig. 3, on line *x, x*.

The wrench consists of the following parts:

25 A head or outer jaw *A*, which is made of square bar steel with a part of one side at one end milled off to the usual shape of the outer jaw of a monkey wrench, and two holes *s, s*, are drilled through it, one near its large end and the other near its middle. A smaller hole *s'*, is drilled part way through the jaw midway between the two holes *s, s*, to receive one end of the screw *d*, which will be described hereinafter. A piece of round steel is bent into a U shape to form the two slides *a, a*, which are milled down a little smaller at the ends to fit into the holes *s, s*, in the jaw *A*. An inner jaw *b*, is made of a steel casting, or by drop forging, similar in shape to the outer jaw *A*, with the addition of a short sleeve *n*, that projects out on one side around one of the holes that are made in the jaw, which holes correspond with the holes *s, s*, described as made in the jaw *A*. The holes in the jaw *b*, are made large enough to slide easily over the slides *a, a*. A hole *v*, is made through the inner jaw *b*, to correspond with the hole *s'* in the outer jaw *A*, and a screw thread is made in this hole *v* to receive the screw *d*. This screw *d*, is made with about

one half of its length reduced in size, and a screw thread is made on this part to fit the thread made in the hole *v*, in the jaw *b*. The other part of the screw *d*, is left of the full size, and has crossed threads made on it, or is otherwise made rough to enable the thumb or fingers to turn it easily when the wrench is held in the hand. The ends of the screw *d*, are milled down to form journals, one to fit in the hole *s'*, in the jaw *A*, and the other to fit in a recess *i*, made in the middle of the loop formed by bending the bar that makes the slides *a, a*. To strengthen this bend a block *h*, may be fitted into it, and a part of the hole or bearing *i*, made in it.

In Fig. 3 the sleeve *n*, is shown with its outer part carried out around the end of the loop and joined to the inner jaw on the other side, to form an extension of the handle when the wrench is opened to turn a larger nut and more leverage is needed.

The wrench is put together by first screwing the screw *d*, part way into the inner jaw *b*, and then placing that jaw on the slides *a, a*, so as to bring the end of the screw into the recess *i*, in the block *h*, which has previously been put into its place in the loop. The outer jaw *A*, is then put on the ends of the slides *a, a*, so as to rest on the shoulders formed in milling the ends down, and the ends are riveted on the outside where the holes *s, s*, have been counterbored to receive the metal, so as to finish off smooth on the outside.

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

A wrench consisting of a round bar bent in the shape of a U and having an outer jaw riveted on its two ends, a loose jaw sliding on the side bars of the U, with a screw located between said bars, and having one end journaled in the outer jaw and the other end in the bend of the U and having a screw thread made thereon fitting into a screw thread in said loose jaw, the bent bar forming the handle of the wrench, substantially as described.

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Witnesses:

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