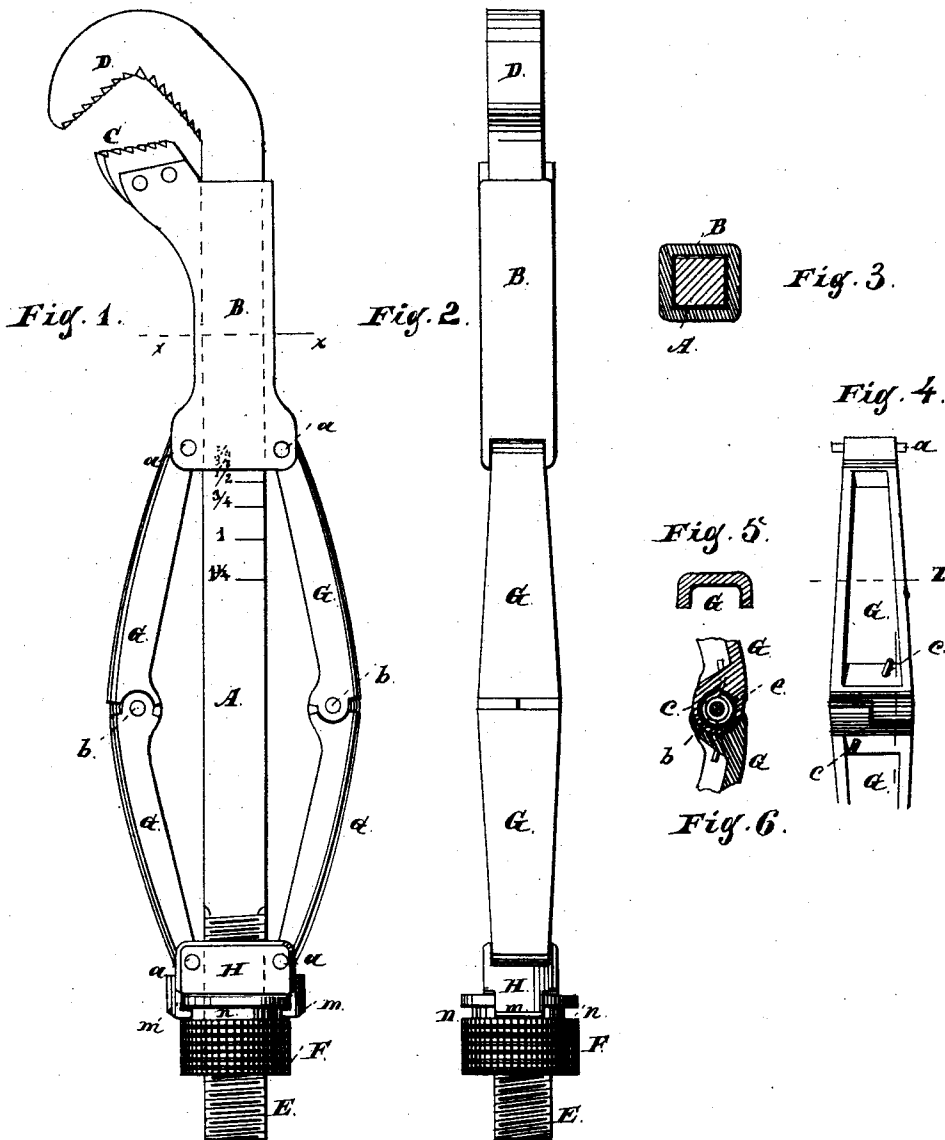


S. E. HURLBUT.
Adjustable Wrench.

No. 222,787.

Patented Dec. 23, 1879.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

SETH E. HURLBUT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN ADJUSTABLE WRENCHES.

Specification forming part of Letters Patent No. **222,787**, dated December 23, 1879; application filed May 24, 1879.

To all whom it may concern:

Be it known that I, SETH E. HURLBUT, of the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Adjustable Wrenches, of which the following is a specification.

The invention consists in the arrangement of a bar of steel or iron of proper size and length for the purpose, upon one end of which is formed or attached the permanent jaw of the wrench, the adjustable jaw of the same being formed upon or attached to the end of a sleeve, which is fitted to and movable upon the bar of steel or iron in a manner necessary to increase or diminish at will the space between the opposite jaws of said wrench, so as to admit objects of various sizes or diameters. On the opposite end of the above-mentioned sleeve from that on which the jaw is formed or attached, I attach the ends of two jointed levers on opposite sides of the bar, the opposite ends of which levers are attached to a head fitted around and movable upon the bar of steel or iron near the end of same opposite to that upon which is formed or attached the permanent jaw of said wrench.

The above-mentioned movable head is attached to an adjusting-nut, which works or runs on a thread cut upon the extreme end of the bar opposite to that upon which is formed or attached the permanent jaw above mentioned.

The above-mentioned jointed levers are used by the operator as the handle of the wrench, the same being at all times forced outward from the bar by means of a spring, and when in proper position the space between the levers at their joints and the bar should be about one-half of one inch. The pressure of the operator's hand upon the levers will then force them inward, thereby causing the adjustable jaw to be forced upon and firmly grasp the object to be turned.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a side view of a device embodying my invention. Fig. 2 is a top view of said device. Figs. 3, 4, 5, and 6 are details.

A, Fig. 1, represents a bar of steel or iron, on which is formed the permanent jaw of the wrench. B represents a sleeve fitted around

and movable upon the bar A. C represents the adjustable jaw attached to the end of sleeve B. D represents the permanent jaw above mentioned. E represents a thread formed upon the end of the bar A. F represents an adjusting-nut fitted to and movable upon the thread E. G G G G represent levers jointed together by the pivoting-pins *b b*, and attached to the sleeve B and head H by the pivoting-pins *a a a a*. H represents a head fitted around and movable upon the bar A. *m m* represent hooks formed upon the head H, and connecting said head to the adjusting-nut F by being shaped to fit into the groove *n*, formed in and around said nut.

Fig. 2 is a top view of the above-described device, marked with letters of reference similar to those designating like parts in Fig. 1.

Fig. 3 is a cross-section of the bar A and sleeve B at the point indicated by the dotted line *x x* in Fig. 1.

Fig. 4 is a view of the under side of the jointed levers G G G G described in Fig. 1. *c c*, Fig. 4, represent the ends of a spring inserted in the levers G G G G at the joint of the same.

Fig. 5 is a cross-section of the jointed levers at the point shown by the dotted line *z* in Fig. 4.

Fig. 6 is a longitudinal sectional view of the jointed levers at the joint of same. *e*, Fig. 6, represents a spring coiled around the pivoting-pin *b* in such manner as to cause the jointed levers G G G G to stand in the position shown in Fig. 1.

The accompanying drawings represent a wrench having jaws suited to the purpose of turning objects of round or circular form; but jaws may be formed upon or attached to the above-described device, of any desired shape, either with or without teeth, thereby suiting the same to any purpose for which a wrench can be used.

I do not confine myself to the use of jointed levers, but may insert in their stead a lever or levers made of any spring metal formed in one piece, and shaped similar to the jointed levers shown in Fig. 1, thus constituting a lever and spring in one and the same piece of metal.

What I claim as my invention, and for

which I desire to procure Letters Patent, is—

1. A wrench having an adjustable jaw attached to and operated by one or more jointed levers, or their equivalent, substantially as described.

2. The combination of the bar A, sleeve B, jaws C D, thread E, adjusting-nut F, jointed

levers G G G G, pivoting-pins *a a a a* and *b b*, head H, and hooks *m m*, substantially as described, and for the purpose set forth.

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Witnesses:

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