(No Model.)

S. BOOTHROYD.

WRENCH.

No. 456,265. Patented July 21, 1891.

Fig. 1.

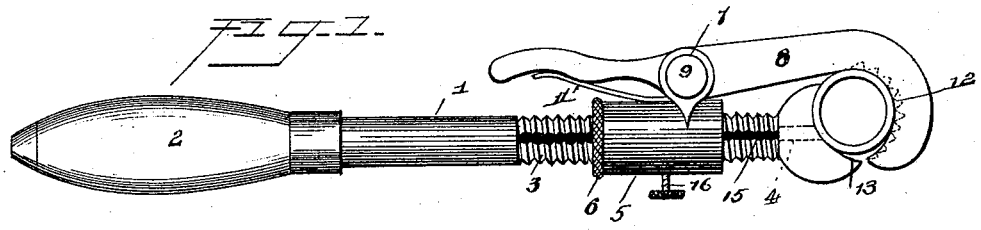


Fig. 2.

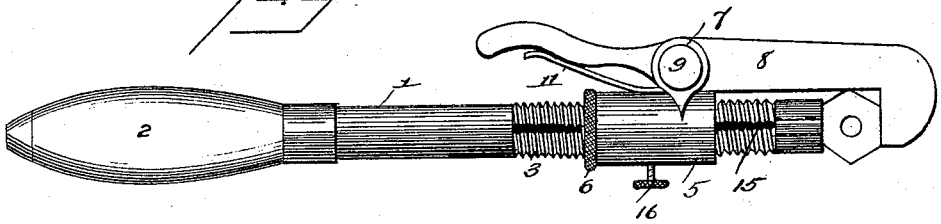


Fig. 3.

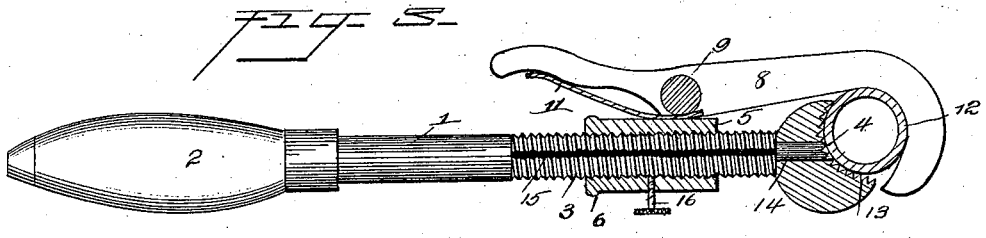


Fig. 4.

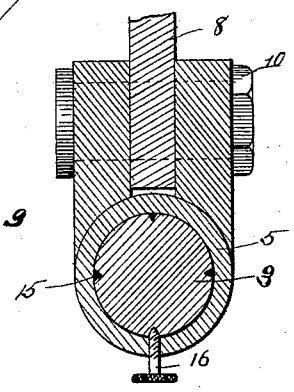


Fig. 5.

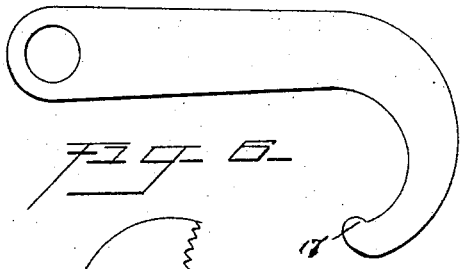
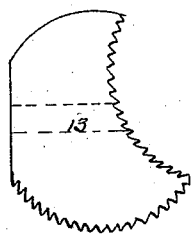


Fig. 6.



Witnesses
Isaac Behrends.
W. S. Dewall.

Inventor
Samuel Boothroyd
By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

SAMUEL BOOTHROYD, OF AMESBURY, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 456,265, dated July 21, 1891.

Application filed August 11, 1890. Serial No. 361,762. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL BOOTHROYD, a citizen of the United States, residing at Amesbury, county of Essex, and State of Massachusetts, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to improvements in wrenches; and the objects of the invention, together with the novel features thereof, will appear in the following description, and be particularly pointed out in the claim.

Referring to the drawings, Figure 1 is a side elevation of a wrench constructed in accordance with my invention. Fig. 2 is a similar view of the wrench, the same being adapted for operating upon nuts. Fig. 3 is a vertical longitudinal section. Fig. 4 is a transverse section. Fig. 5 is a detail in elevation of a pivoted jaw adapted for operating upon rib-couplings. Fig. 6 is a detail in elevation of one of the swiveled heads.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the cylindrical shank of the wrench, which at its lower end is provided with a suitable handle 2, and from about midway to its upper end is provided with screw-threads 3. Above the screw-threads the shank or stock is reduced to form a cylindrical tenon 4. Upon the screw-threads is mounted a revoluble sleeve or nut 5, internally bored and threaded to receive the shank, and at its lower end provided with a milled periphery 6, adapted to be grasped by the thumb and forefinger of one hand, while the shank is turned with the other. From the sleeve extends a pair of perforated lugs or ears 7, through which and the corresponding perforation formed in the pivoted jaw 8 is passed a removable bolt 9, maintained in position by a nut 10. The jaw 8 is extended in rear or below its pivot and has interposed between its inner surface and the sleeve 5 a a curved spring 11, designed to press said end away from the shank and sleeve. Above its pivot the jaw is curved, as at 12, the inner edge thereof being in some instances plain, as shown by full lines in Fig. 1, or toothed, as shown by dotted lines in said figure. Other forms of pivoted jaws may be substituted, as—for instance the angular jaw shown Fig. 2.

Various kinds of jaws may be employed in connection with this wrench and in connection with the pivoted jaws above mentioned. In Fig. 1 the jaw 13 has a concaved plain upper end or face. As shown in Fig. 2, the head may be square or cubical, and, as shown in Fig. 3, the head may be provided with a concaved and a convexed threaded surface or face. In all the different forms of jaws 13 the same are provided with openings 14, which fit loosely upon and receive the tenons 4, so that the shank of the wrench may rotate independent of the jaws 13. The shank is provided along its threaded portion with a series of longitudinal grooves 15 and the sleeve 5 with a set-screw 16 for engaging any one of the grooves, and thus retain the sleeve against rotation and yet prevent the inner ends of the set-screw from marring or injuring the threads of the shank.

In Fig. 5 I have shown a curved jaw having a plain inner edge and provided at its extremity with a transverse rib or bite 17. Such form of jaw I have found especially adapted for operating upon rib-couplings.

The operation of the wrench is as follows: The shank 1 is rotated with one hand and is held in the other hand, the movable head 13 resting upon the object, such as the pipe, nut, rod, &c. In this manner the jaw 8 is drawn to the upper side of the object in the same clamp. It is now simply necessary to operate the wrench in the usual manner.

Having described my invention, what I claim is—

In a wrench, the combination, with the cylindrical shank threaded at its upper end, terminating in a reduced tenon, and provided with a series of longitudinal grooves, of a head swiveled upon the tenon, a sleeve having an internally-threaded bore mounted upon the shank, a jaw pivoted to the sleeve and extended in rear of its pivot to form a handle, a flat-spring interposed between the handle and sleeve, and a set-screw mounted in the sleeve and engaging a groove of the shank, substantially as specified.

SAMUEL BOOTHROYD.

Witnesses:
JOHN P. TITCOMB,
JOHN F. MOOAR.