

BEST AVAILABLE COPY

D. A. LUCAS.
WRENCH.
APPLICATION FILED MAY 18, 1908.

906,040.

Patented Dec. 8, 1908.

Fig. 1.

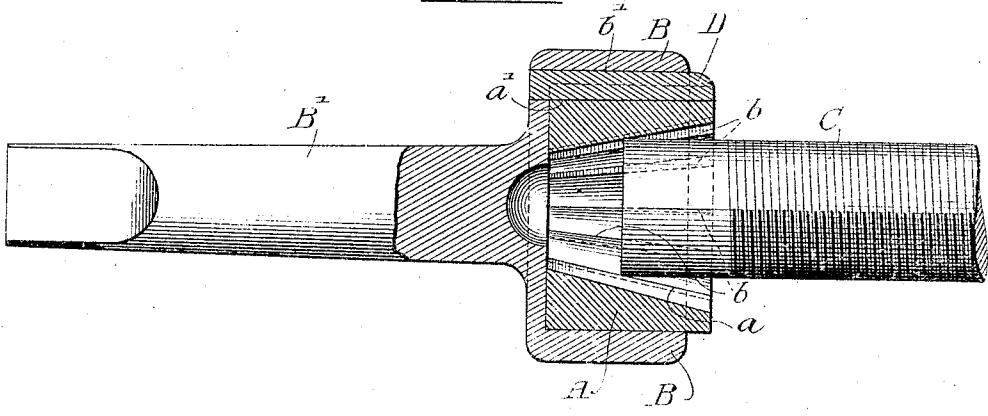
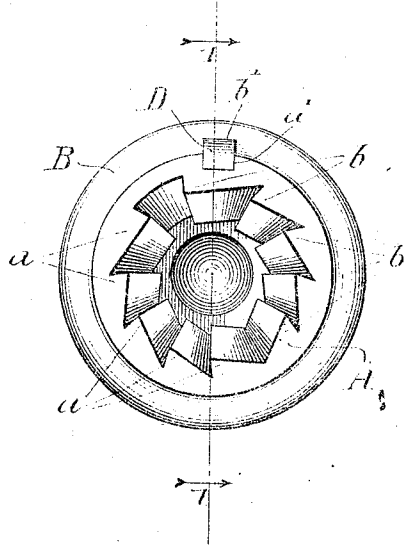


Fig. 2.



Witnesses:-
Wm. H. Whithead
Katharine C. Lusk

Inventor.
Daniel A. Lucas
By *Pierce & Fisher*
Attys

BEST AVAILABLE COPY

UNITED STATES PATENT OFFICE.

DANIEL A. LUCAS, OF HAVELOCK, NEBRASKA.

WRENCH.

No. 906,040.

Specification of Letters Patent.

Patented Dec. 8, 1906.

Application filed May 18, 1903. Serial No. 433,343.

To all whom it may concern:

Be it known that I, DANIEL A. LUCAS, a citizen of the United States, residing at Havelock, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Wrenches, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

The present invention has for its object to provide an improved construction of wrench which, while more especially designed for screwing stay bolts into and out of boiler sheets, can, however, be advantageously employed for a variety of other uses.

The invention consists in the features of novelty hereinafter described, illustrated in the accompanying drawing and particularly defined in the claim at the end of this specification.

Figure 1 is a view partly in side elevation and partly in section through a socket wrench embodying my invention, the wrench being shown as in engagement with the end of a stay bolt. Fig. 2 is an end view of the wrench.

My improved wrench comprises a socket A that is formed with an outwardly flaring cavity having a toothed wall adapted to grip the end of the stay bolt or other article in connection with which the wrench is to be employed. Preferably, the cavity of the socket A is of general conical shape and the surface of the cavity is provided with two sets of teeth *a* and *b* that face in opposite directions. My purpose in forming the socket A with a flaring cavity is not only to enable the wrench to more easily and effectively engage the end of the stay bolt C, but also to enable the wrench to engage stay bolts or like articles of different sizes and shapes. The object in forming the inner face of the wrench cavity with reversely disposed teeth, is to enable the wrench to more effectively engage the stay bolt or like article to turn the same in opposite directions and screw it into and out of position. As

shown, the wrench socket A is carried within the chambered portion of a stock B, the shank B' of this stock being adapted for use in an air drill or in any other suitable apparatus whereby rotary motion may be imparted thereto. Preferably, the wrench socket A is held within the chambered stock B by a key D that passes through a keyway *a'* formed in the outer wall of the socket A and within a keyway *b'* formed in the inner wall of the stock B.

When the wrench is to be used, as, for example, in setting stay bolts in boiler plates, the socket A will be forced against the end of a stay bolt C, as shown in Fig. 1 of the drawing, and rotary motion will then be imparted to the wrench from any suitable source of power. Inasmuch as the teeth of the socket A are reversely arranged, as in the preferred form of my invention illustrated in the drawing, the wrench can be used for turning the stay bolt or the like in opposite directions.

Inasmuch as the socket A is detachably held within the chambered stock B by a key D, the socket can be readily removed from the stock B whenever it is desired to change the socket, as, for example, when a socket having a cavity of a different size is desired for use.

It is manifest that the precise details of construction above set out may be varied without departure from the scope of the invention.

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

A wrench of the character described, embodying a chambered stock, and a socket removably held therein and having an outwardly flaring, conical cavity provided upon its interior with reversely disposed teeth, said teeth extending over the entire interior surface of said conical cavity.

DANIEL A. LUCAS.

Witnesses:

MATIE MADDEN,
A. A. HYERS.