

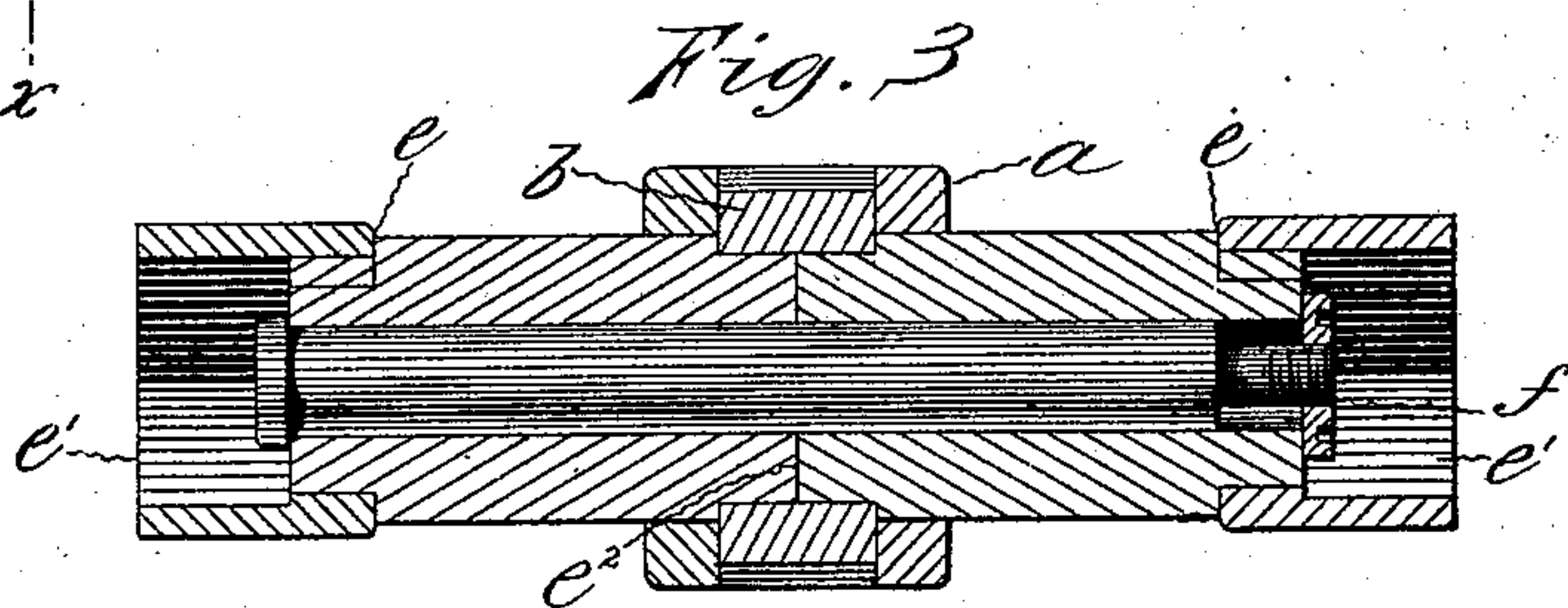
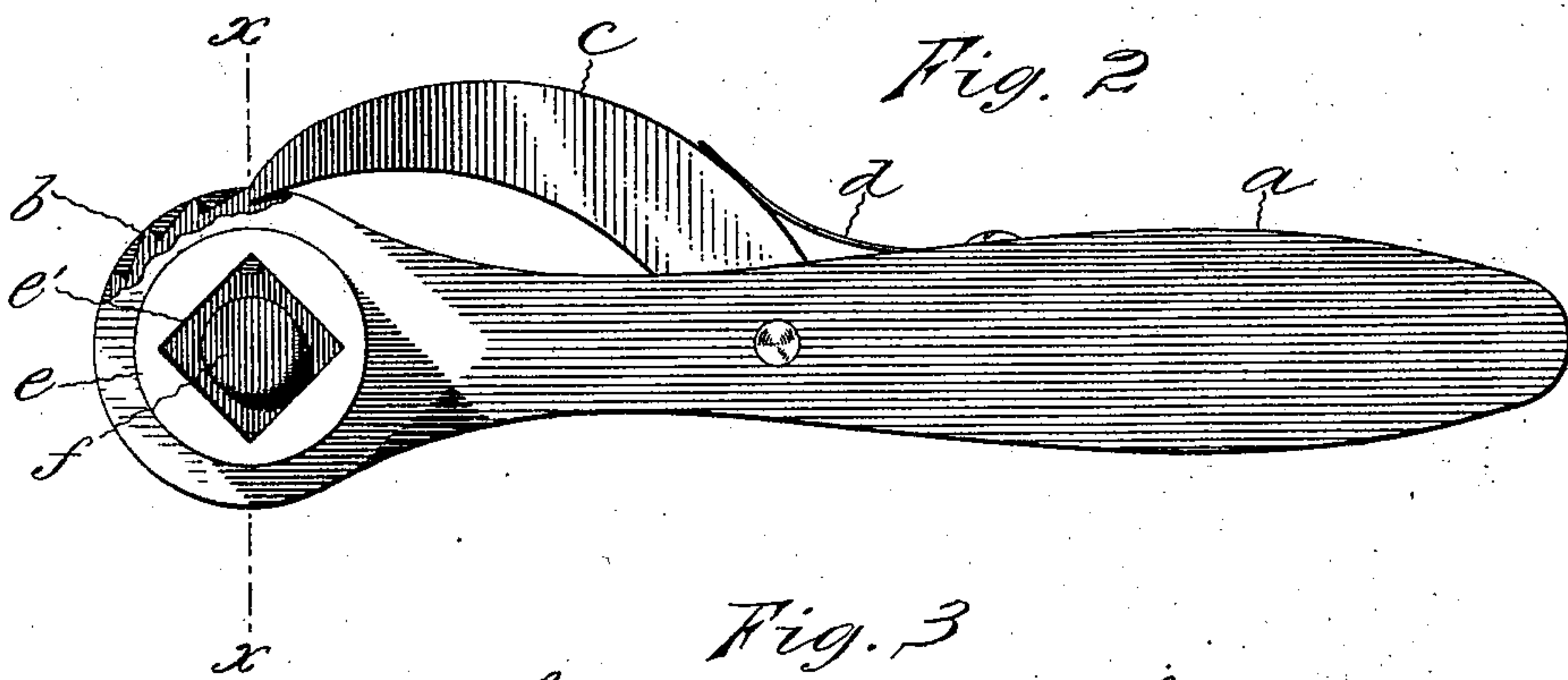
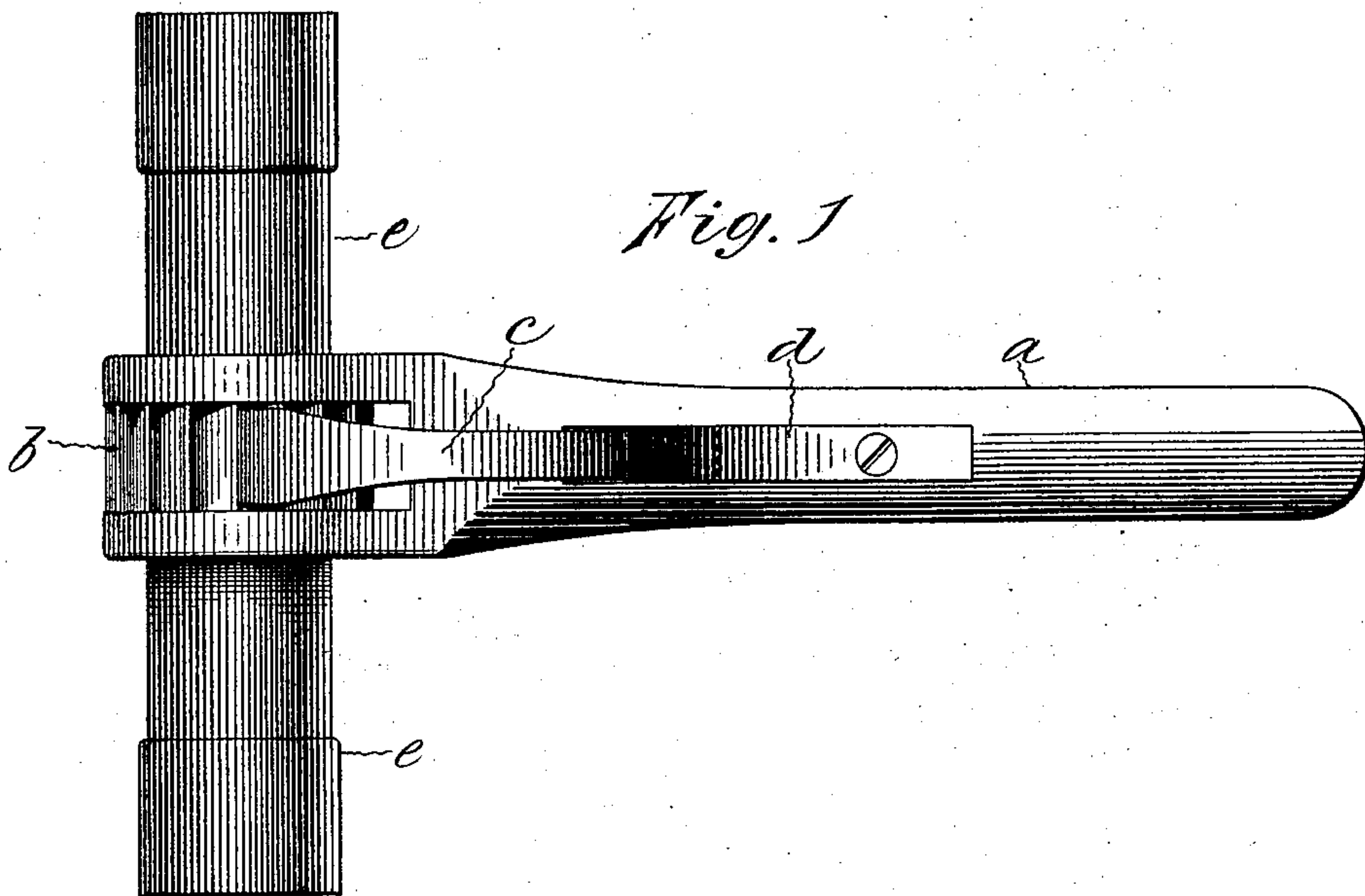
No. 620,225.

Patented Feb. 28, 1899.

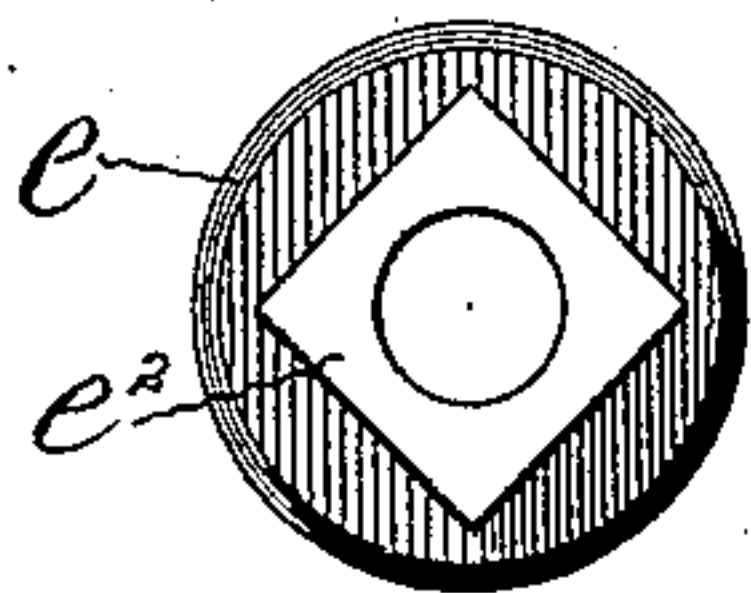
T. F. CHURCHILL.  
REVERSIBLE WRENCH.

(Application filed Apr. 15, 1898.)

(No Model.)



*Fig. 4.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

THEODORE F. CHURCHILL, OF WINSTED, CONNECTICUT.

## REVERSIBLE WRENCH.

SPECIFICATION forming part of Letters Patent No. 620,225, dated February 28, 1899.

Application filed April 15, 1898. Serial No. 677,642. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE F. CHURCHILL, a citizen of the United States of America, residing at Winsted, in the county of Litchfield and State of Connecticut, have invented a certain new and useful Improvement in Reversible Wrenches, of which the following is a description, reference being had to the accompanying drawings, wherein—

10 Figure 1 is a top view. Fig. 2 is a side view. Fig. 3 is a view in longitudinal section on the plane denoted by the dotted line  $x\ x$ . Fig. 4 is an end view of the inner end of one of the socket-pieces.

15 The object of the improvement is to provide a ratchet-wrench capable of giving a nut or the like rotatory motion in either direction without changing the vibratory action or motion of the lever or handle.

20 In the accompanying drawings the letter  $a$  indicates the operating lever or handle, which for the sake of cheapness of construction is preferably made all in one piece and forked at its inner end.

25 The letter  $b$  denotes a rotary ratchet located within said fork and having its teeth facing all in one direction.

The letter  $c$  denotes a pawl hung in the lever and coöperating with the ratchet, it being pressed to contact therewith by the spring  $d$ .

30 The letters  $e$  denote two socket-pieces. Each has in its outer end a socket  $e'$  for grasping a nut or the like. These socket-pieces must both rotate with the ratchet, a function readily attained by squaring the inner end  $e^2$  and having the same fit into a correspondingly-shaped mortise in the ratchet. By preference these socket-pieces are each of them detach-

able or removable from the rotary ratchet to the end that different socket-pieces having 40 sockets  $e'$  of varying capacity may be used with the instrument. These socket-pieces when in place act as trunnions for journaling the rotary ratchet in the lever. The socket-pieces may be and preferably are round on 45 their exterior, whereby their bodies can be journaled in eyes in the arms of the fork of the lever, and interiorly they may be hollow or tubular, so as to receive a bolt  $f$  passing through them and the interposed ratchet 50 for holding all parts removably in position.

By the use of this device the operator is enabled to rotate a nut or the like in either direction, in the one case having the pawl on top of the lever and in the other case under- 55 neath, of course reversing the socket-pieces end for end.

I claim as my improvement—

In a wrench, the combination with a lever in one piece of material having an integral 60 fork in its forward end whose arms are provided with eyes; of a ratchet within said fork and having its teeth all facing in one direction, two tubular socket-pieces journaled in said eyes and having squared or angular inner 65 ends removably engaging similarly-shaped mortises in the sides of the ratchet and angular sockets in their outer ends, a through-bolt for removably attaching said socket-pieces to the ratchet, and means for prevent- 70 ing a retrograde movement of the latter, as and for the purpose set forth.

THEODORE F. CHURCHILL.

Witnesses:

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