

(No Model.)

E. C. MEAD.

WRENCH.

No. 389,400,

Patented Sept. 11, 1888.

Fig. 1.

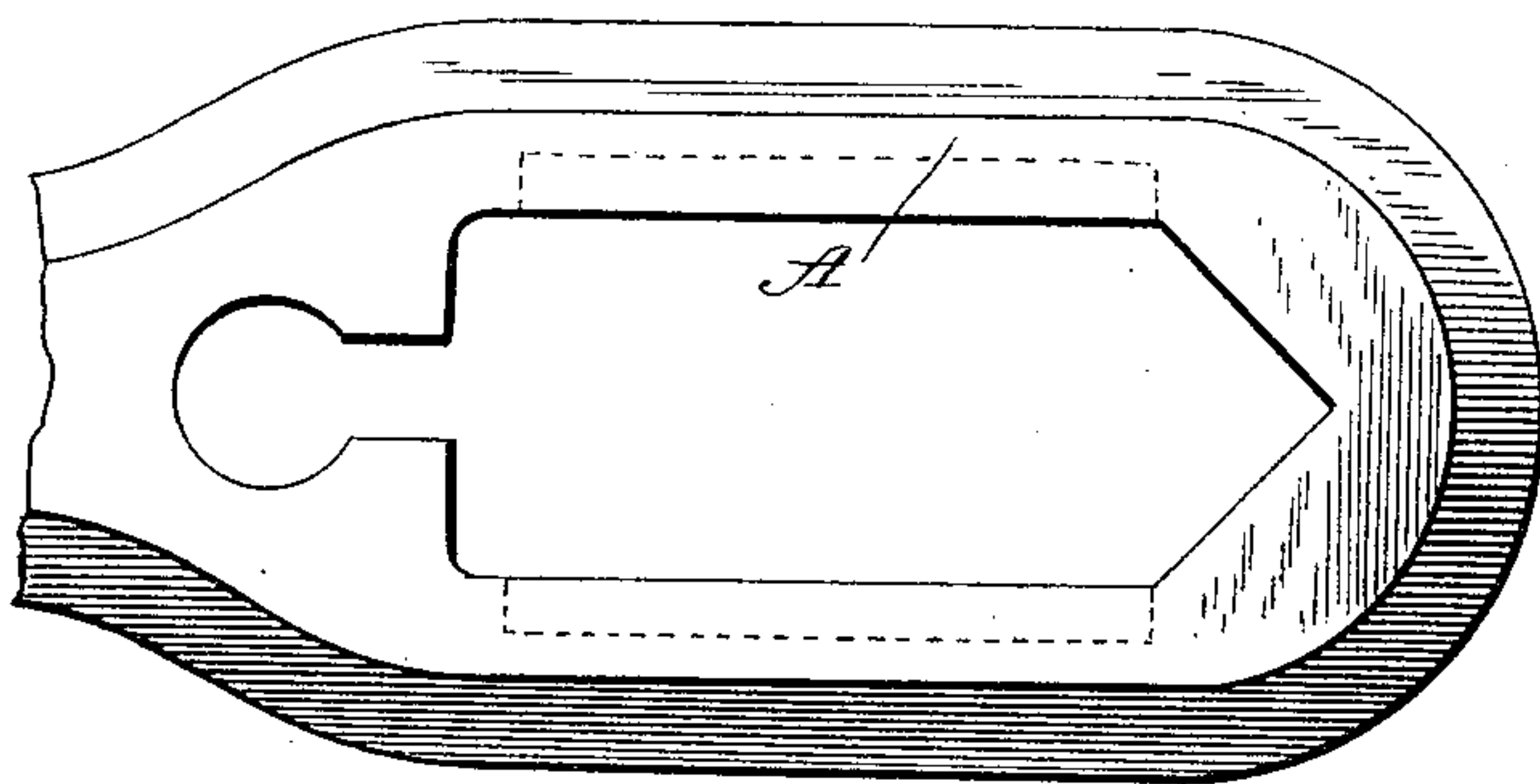


Fig. 2.

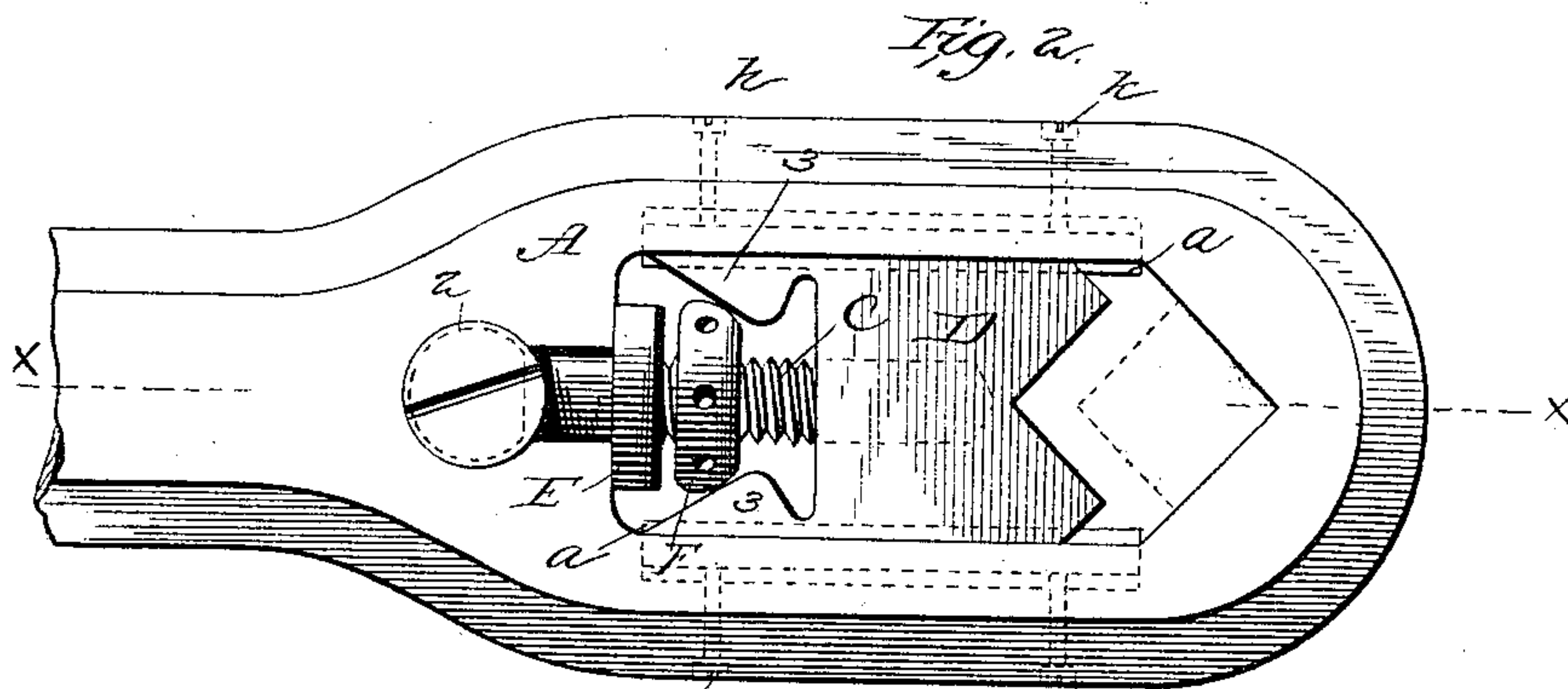


Fig. 3.

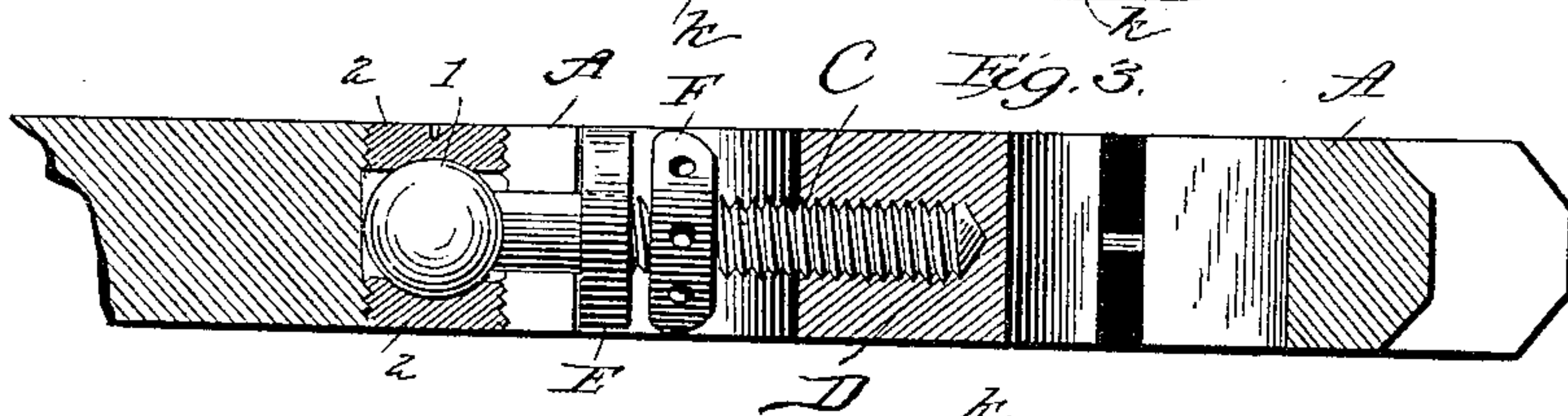
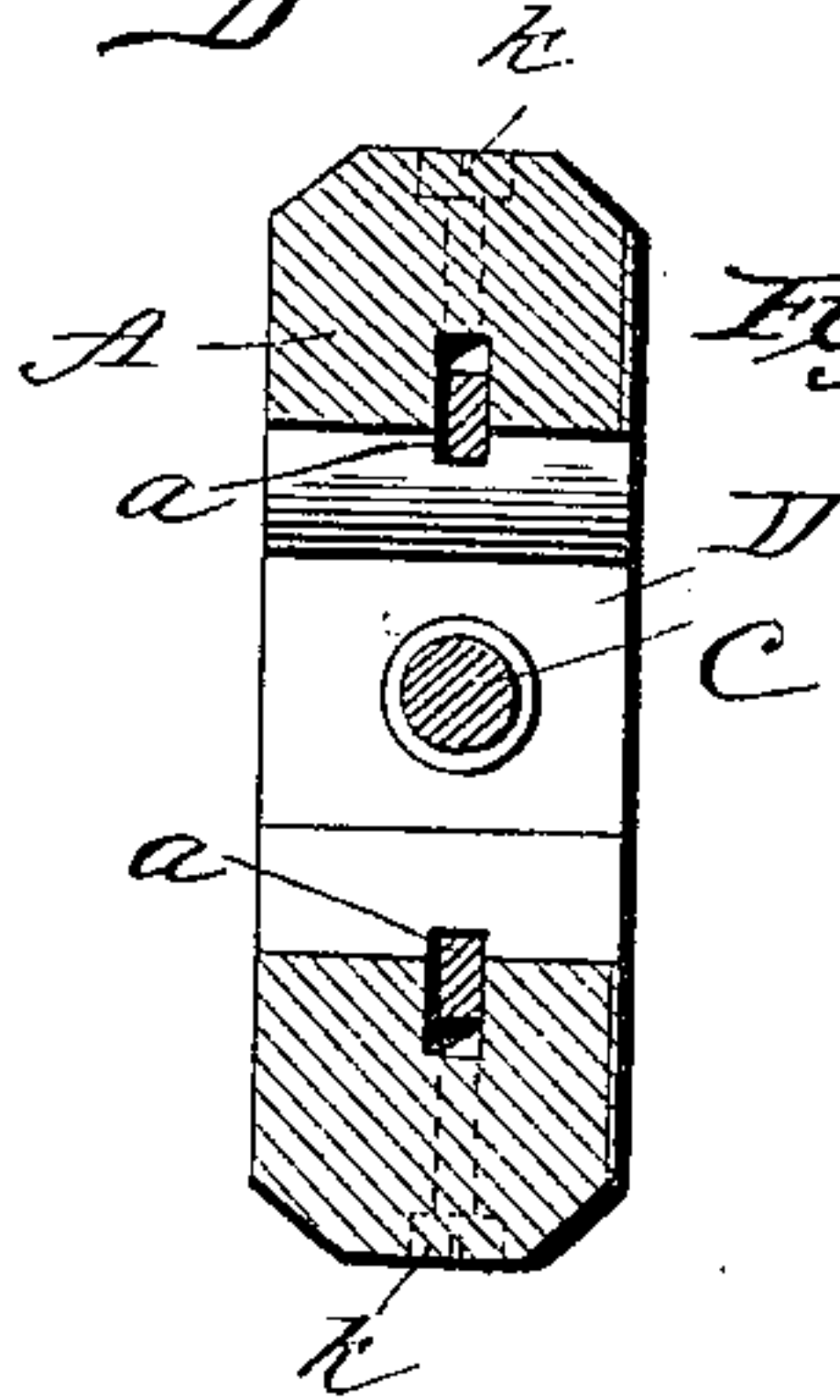


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SPECIFICATION forming part of Letters Patent No. 389,400, dated September 11, 1888.

Application filed February 29, 1888. Serial No. 265,713. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. MEAD, of Elkhart, in the county of Elkhart and State of Indiana, have invented a new and useful Improvement in Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved wrench, and relates particularly to that class known as "tap-wrenches," but is adapted to all other purposes for which wrenches are used; and the object of the invention is to provide a wrench capable of speedy adjustment to very fine divisions and free from all projections, so that it will work in very close places.

A further object is to provide such a wrench that when properly adjusted the parts will be held secure in their positions, so that all danger attendant upon the slipping off of the wrench from the part operated upon will be prevented.

My invention therefore consists in certain details of construction and combination of parts, whereby I am enabled to carry out the objects of my invention in simple and effective manner.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the frame of the wrench. Fig. 2 is a similar view of the wrench with all the parts in position. Fig. 3 is a central longitudinal section on line *x x* of Fig. 2. Fig. 4 is a transverse section.

In the drawings, A is the main part of the wrench, to which the handle is attached and in which the operating parts are supported. This part A is of any suitable shape, and has a central opening, as in the form shown in Fig. 1, one end of said central portion being contracted and then opening out into ball form to receive the head of the bolt upon which the adjustable jaw moves, and the other end of said central portion is made of V shape or other suitable shape, and thus is adapted to fit over any nuts, taps, or reamers which it is desirable to turn or tighten or loosen, and this forms the rigid jaw of the wrench. Recesses are made along the parallel sides of this opening to receive plates *a a*, which form tongues and are adapted to fit in grooves in the sliding jaw

or die, and serve as guides for the same. These tongues are adjustable by means of set-screws *k k* upon each side of the frame.

The sliding jaw of the wrench is shown as attached in proper position for operation in Fig. 2. A screw-threaded bolt, C, carries the correspondingly screw-threaded jaw D, and moves the same longitudinally in order to increase or diminish the size of the wrench-opening. This jaw is made approximately V-shaped or otherwise suitably shaped at one end, the apex of the V extending in a contrary direction to the apex of the V formed in the end of the central portion of the frame, so that when the parts are together a rectangular or other appropriately shaped socket is formed between them adapted to receive the nut, tap, or reamer which it is intended to operate upon.

As above intimated, the jaw is grooved upon each side and adapted to receive the tongues in the frame, by which it is guided in its movement. The head of the bolt C has a ball-bearing, 1, in the socket formed in the inner end of the frame, and is held in place by a short screw-threaded bolt, 2, upon either side. This bolt C has formed integral with it the thumb-nut E, and it will thus be seen that by turning on the nut E the bolt C will turn, and thus force the jaw D forward or backward, as desired, in order to adjust the sliding jaw to the nut, tap, or reamer.

It has been found by practice that when the sliding jaw has been adjusted to its proper position to grasp the nut, tap, or reamer to be turned, unless some other means are provided for securing the jaw in said position, in the operation of the device the jaw will slip from its extended position, and thus the hold on the nut, tap, or reamer be lost. A great many means have been devised for this purpose; but they are all more or less objectionable; so I have devised the following:

The jaw D is formed with spring-tempered clamping parts 3, having inner inclined faces. Adjustable upon the bolt C is a nut, F, slightly tapering in form, and this nut, when moved forward on the bolt, is adapted to bear against the inclined faces of the jaw D, and thus force them out and cause them to bind against the walls of the recess in which the jaw moves.

Preferably I have provided holes in the periphery of this nut F, in order that pins may be inserted to turn it around.

The operation of the device is as follows:

5 The nut, tap, or reamer to be operated upon is placed in position between the two jaws and the movable jaw adjusted by means of the screw-bolt until it grasps the nut, tap, or reamer securely. Then, in order to prevent
10 liability of displacement, the nut F is adjusted forward on the bolt, and, bearing against the inclined spring sides of the jaw, forces them apart and causes them to bind against the walls of the recess in which they slide, thus
15 holding the adjustable jaw securely in place.

I claim—

1. In combination with the frame A, the jaw D, carried by a screw-bolt, one end of said jaw having inclined spring-faces, and a device,
20 substantially as described, for spreading them, substantially as described.

2. In combination with the frame A, the jaw D, carried by a screw-bolt, said jaw formed upon one end with inclined spring-faces *g g*,
25 and a nut, F, movable on said screw-bolt, adapted in its forward movement on said bolt to force out the spring-faces *g g* and cause them to bind upon the sides of the frame, substantially as described.

3. In a wrench, a frame, a jaw adjustable in
said frame, carried by a screw-bolt, one end of
said jaw having inclined spring-faces, and a
device on said screw-bolt for spreading them,
the head of said screw-bolt having a bearing
in a socket formed in the frame, whereby it is
35 prevented from displacement, substantially as described.

4. In a wrench, a frame having a central opening therein, plates *a a*, adjustably secured to the sides of said opening, having tongues
40 formed on their inner sides, and a sliding jaw, D, adjustable in said frame, one end thereof having inclined spring-faces, and a device, substantially as described, for spreading them,
said jaw having grooves formed in its sides
15 adapted to engage with the tongues on the plates *a a*, whereby the jaw D is guided, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two sub-
50 scribing witnesses.

EDWARD C. MEAD.

Witnesses:

ORVILLE T. CHAMBERLAIN,
JOHN M. MONSCHEIN.