

H. W. ATWATER.  
Clamp.

No. 206,851.

Patented Aug. 13, 1878.

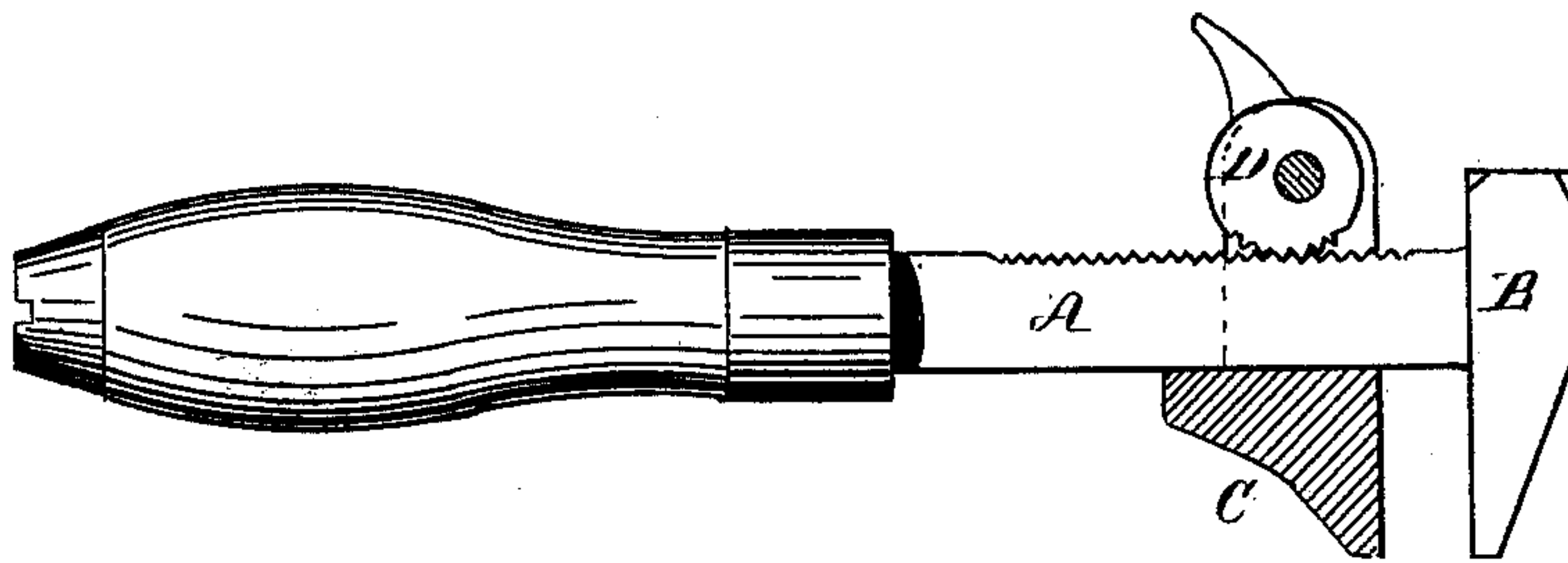


Fig. 1

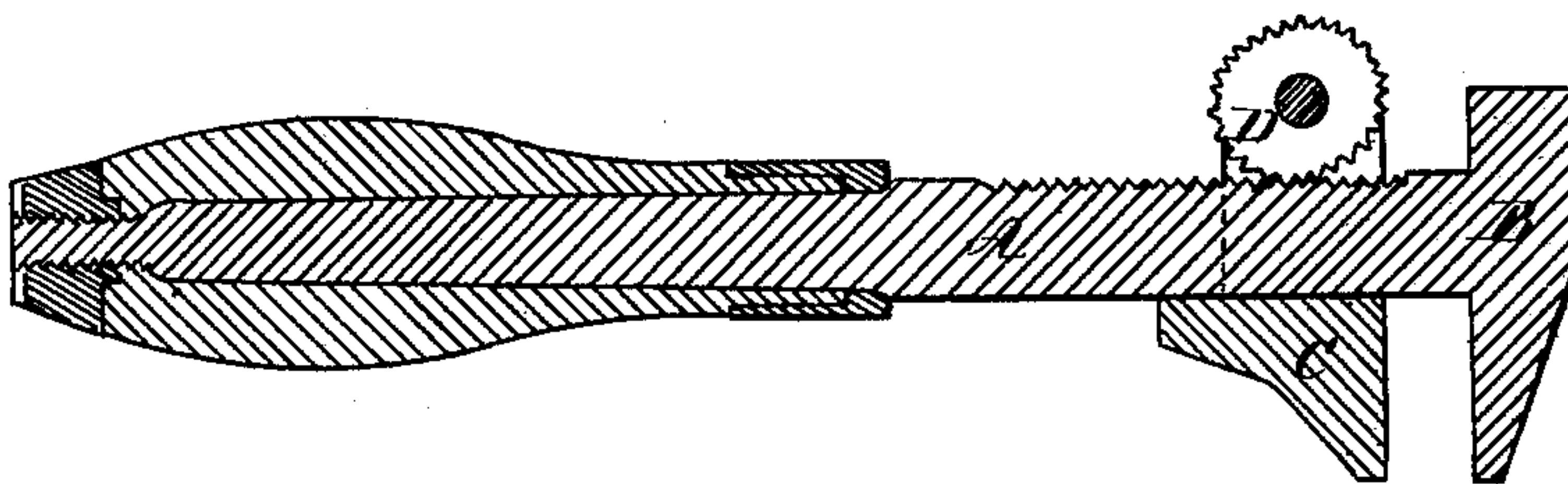


Fig. 2.

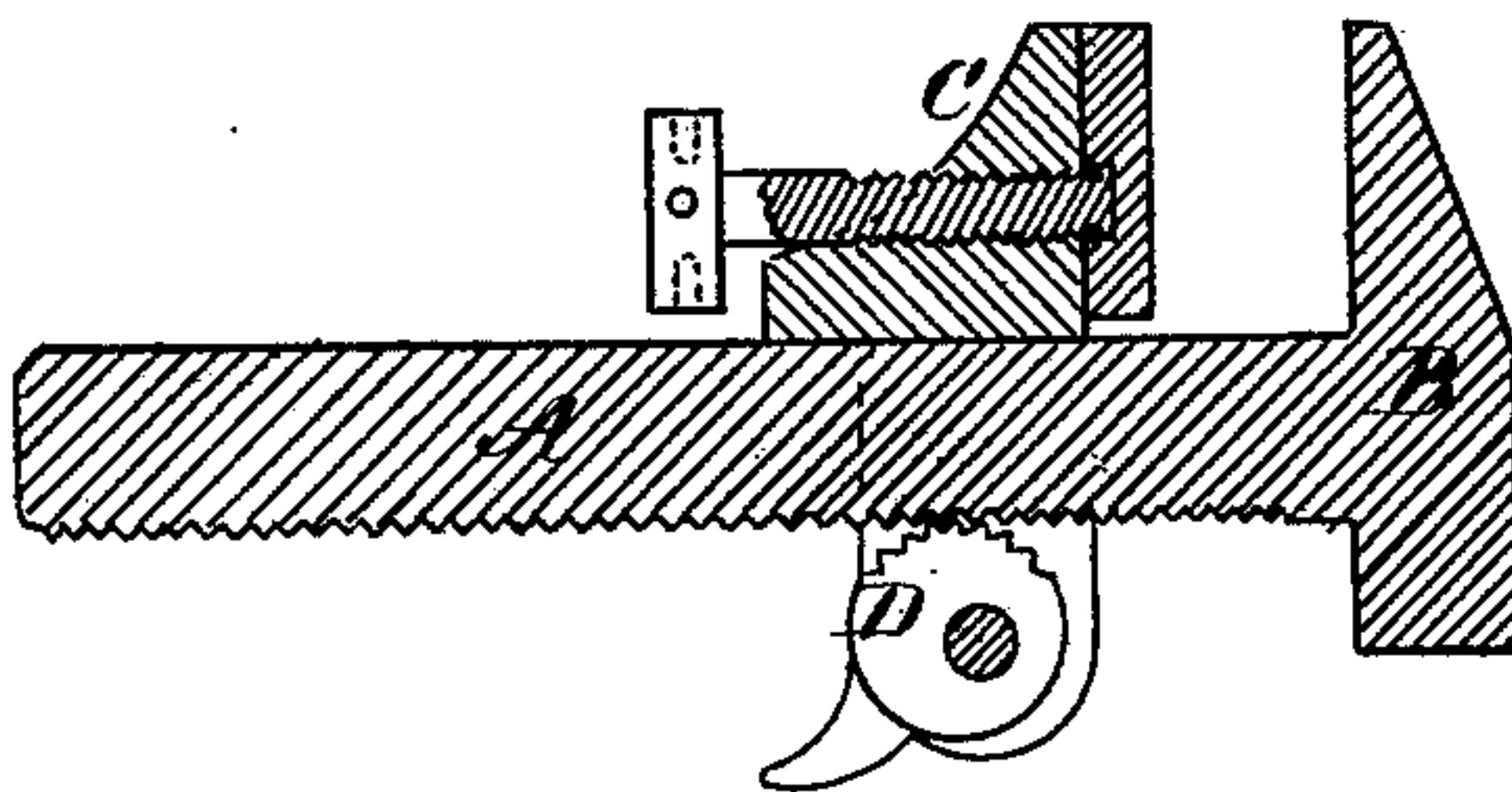


Fig. 3.

*Witnesses*

*George D. G. Coan*  
*L. P. Glade.*

*Henry W. Atwater*  
*by J. E. Maynard*  
*his atty*

# UNITED STATES PATENT OFFICE.

HENRY W. ATWATER, OF NEWTON, MASSACHUSETTS.

## IMPROVEMENT IN CLAMPS.

Specification forming part of Letters Patent No. **206,851**, dated August 13, 1878; application filed March 27, 1878.

*To all whom it may concern:*

Be it known that I, HENRY W. ATWATER, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Improved Clamp, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, making a part hereof.

My invention consists in the combination of a bar, milled or toothed, as hereinafter described, with a pair of clamping-jaws, one of which is movable along the bar toward and from the other, and an eccentric, also milled, and so arranged with relation to the jaw and the bar as to lock them securely together, all as now to be more definitely described.

In the drawings, Figures 1 and 2 show a wrench, and Fig. 3 a clamp, embodying my invention.

A is the bar, to which is attached the jaw B. C is the moving jaw, mounted upon the bar A, so that it can be moved toward and from the jaw B. D is an eccentric provided with small teeth, which mesh with the teeth on the bar A when the eccentric is in one position, but do not mesh when the eccentric is not in that position. Under this arrangement when any strain is brought upon the jaws B and C tending to separate them, the eccentric is turned slightly by reason of the teeth upon its periphery meshing into the teeth upon bar A, and thereby the longer radii of the eccentric are brought between the bar A and the axis of the eccentric, which has the effect to pull the sliding surface of the jaw C solidly against that surface of the bar A on which it slides, and the greater the strain tending to separate the two jaws the more firmly and solidly is jaw C clamped to bar A; and this is what constitutes the distinguishing characteristic of my invention.

The jaw B may be applied to the bar A in the same manner that jaw C is, and when the

device is used as a clamp this may be desirable. In like manner, to give the best results when the device is designed for use as a clamp, or as a wrench and clamp both, it is well to provide the jaw C or the jaw B, either or both, with a supplementary clamping-jaw controlled by a screw, as shown in Fig. 3.

The eccentric may be provided with the thumb-piece, as shown, or may be milled around its entire periphery. In certain cases it is desirable to provide the eccentric with a light spring, which tends to turn the eccentric on its axis into position to engage with the teeth on the bar A. In that case the eccentric will be turned on its axis against the face of the spring by the finger or thumb, in order to slide the jaw C away from the jaw B.

The handle-bar A and jaw B may be conveniently made in one piece of metal in my wrench, as the jaw C is readily applied and removed without reference to the handle or jaw B by simply removing the eccentric, the jaw C being slotted, as shown, to receive bar A and the eccentric.

The eccentric may be on either side of the bar A, as well as in either or both jaws.

I am aware of a wrench having a pawl upon the movable jaw and a rack upon the bar, as shown and described in Precht's Technological Encyclopedia, Vol. 13-14, and shown on Plate 328, Fig. 9, and I disclaim this construction of wrench.

What I claim as my invention is—

The combination of bar A, toothed, as shown, jaws B and C, and the eccentric D, provided with teeth upon its periphery, the eccentric being so arranged that its teeth will mesh with the teeth on bar A, as and for the purposes specified.

HENRY W. ATWATER.

Witnesses:

GEORGE O. G. COALE.

C. H. SLADE.