

(No Model.)

H. W. ATWATER.

WRENCH.

No. 284,162.

Patented Sept. 4, 1883.

Fig. 1.

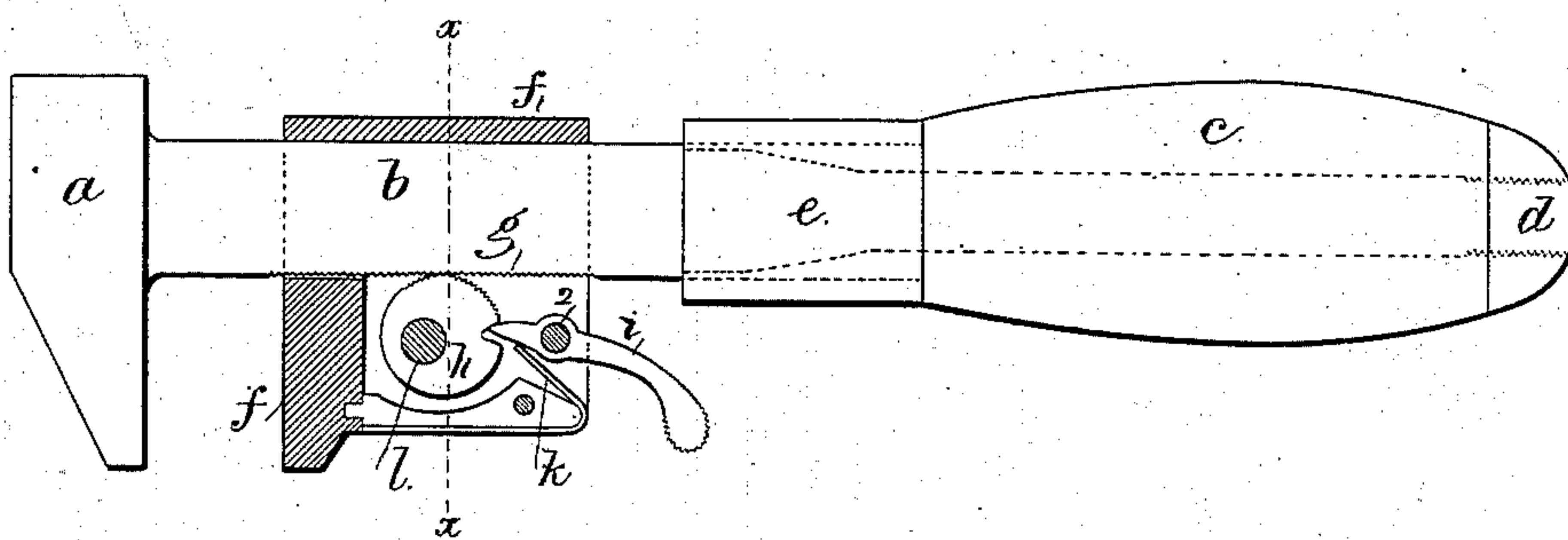
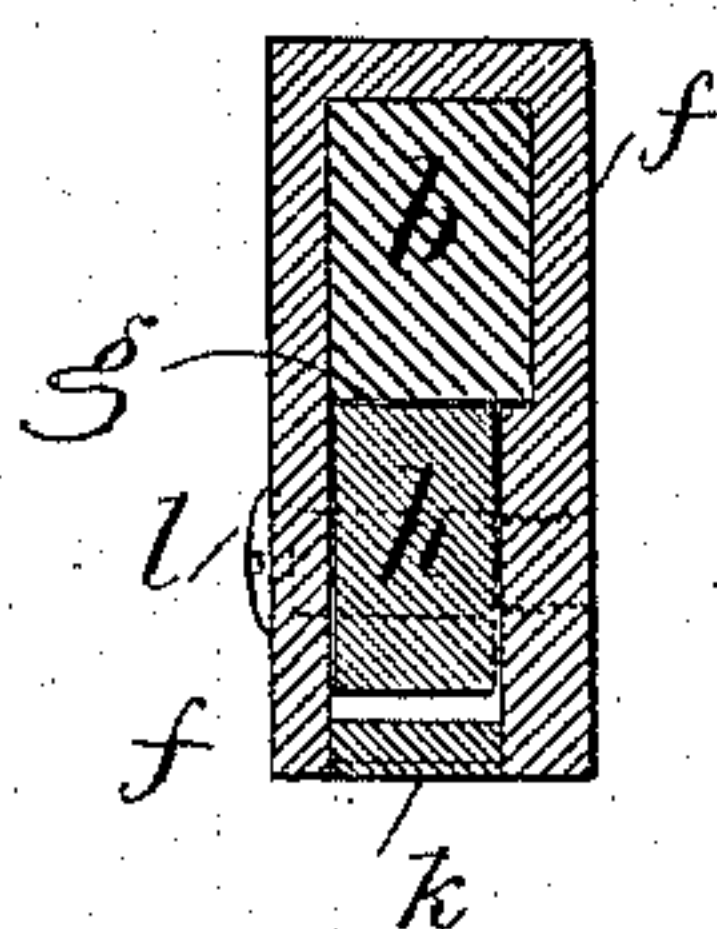


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

HENRY WILLIAM ATWATER, OF ORANGE, NEW JERSEY.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 284,162, dated September 4, 1883.

Application filed May 24, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY WILLIAM ATWATER, of Orange, in the county of Essex and State of New Jersey, have invented an Improvement in Wrenches, of which the following is a specification.

In Letters Patent No. 206,851, granted to me August 13, 1878, a wrench is shown and described in which there is an eccentric pivoted to the sliding jaw, and this eccentric has teeth upon its periphery, and is provided with a projection or finger-piece, so that it can be turned to bring said teeth into contact with teeth on the bar of the fixed jaw, for preventing the sliding jaw moving backward when the strain in turning a nut or other article comes upon said sliding jaw. In using said wrench it is necessary, after the sliding jaw has been adjusted, to turn the eccentric to bring its teeth into contact with those on the bar of the fixed jaw, and if the wrench is held so that the eccentric is below the bar, the finger must be kept upon said finger-piece until the strain comes upon the sliding jaw; otherwise the eccentric will drop away from the teeth on the bar, and the sliding jaw will move backward when the wrench is turned.

To overcome this difficulty is the object of my present invention, and I employ a spring to act through a lever and keep the teeth of the eccentric in contact with those on the bar of the fixed jaw. The short end of the lever, against which the spring bears, is in a notch in the periphery of the eccentric, and by pressing upon the long arm of the lever the eccentric is turned sufficiently to separate its teeth from those on the bar, and release the sliding jaw.

In the drawings, Figure 1 is an elevation of my improved wrench with the sliding jaw in section, and Fig. 2 is a cross-section at the line *x x*.

*a* is the fixed jaw upon the bar *b*, and *c* is a handle of wood or other material upon a tang or reduced portion of said bar, and held upon it by the nut *d*. *e* is a ferrule upon the handle at its junction with the bar *b*. These parts may be of any desired size.

The sliding jaw *f* is made with an opening through it of a size and shape to allow said jaw to slide freely upon the bar *b*, and said jaw *f* is recessed to receive the disk or eccen-

tric *h*, lever *i*, and spring *k*. The pivot *l* of the disk *h* is eccentric to the periphery of the disk, and in said periphery there are a number of fine teeth, corresponding in cut to those at *g* upon the face of the bar *b*. This disk or eccentric *h* has also a notch in its periphery, into which passes the short end of the lever *i*, pivoted at 2, and against the short end of said lever the spring *k* bears. The parts are positioned as shown in Fig. 1, so that the spring acts through the lever to keep the eccentric turned with its teeth in contact with those on the bar *b*, and when thus in contact the sliding jaw can be moved forward toward the fixed jaw, for the spring will yield and allow the teeth on the eccentric to ride over those on the bar; but the sliding jaw cannot be moved backward, because any strain upon the jaw from turning a nut or other article will tend to partially revolve the eccentric *h* and bring the teeth more firmly into contact with those on *b*; hence the teeth on the eccentric *h* act as pawls against the rack to prevent the sliding jaw moving backward, and at the same time the eccentric becomes a curved wedge to firmly clamp the jaw upon the bar. By pressing upon the long arm of the lever, which projects from the case formed by recessing the sliding jaw, the disk or eccentric *h* is turned to separate its teeth from those on the bar *b* and release the sliding jaw. When the finger is removed from said lever, the spring throws the eccentric into contact with the teeth on *b*.

It will be apparent that the spring might act directly upon the eccentric instead of upon the lever *i*, said lever operating, as before described, to swing the eccentric away from the bar *b* when pressed upon by the finger.

I do not claim a toothed eccentric with a projection or thumb-piece, as this has been used in a wrench with a smooth bar. The teeth on the eccentric, however, are liable to slide, and the bar to become scored or notched by the action of the eccentric.

I claim as my invention—

1. The combination, in a wrench, of the sliding jaw *f*, the fixed jaw *a*, and the bar *b*, said bar *b* having teeth along on one of its sides, the eccentric *h*, having teeth on its periphery corresponding to the teeth on the bar *b*, the pivot for the eccentric, a spring to move the eccentric and bring its teeth into contact



with the teeth on the bar, and a lever for moving the eccentric in the opposite direction, substantially as specified.

- 5 2. The toothed bar *b*, fixed jaw *a*, and sliding jaw *f*, in combination with the toothed and notched eccentric *h*, the lever *i*, with its short end in a notch in said eccentric, and the spring *k*, pressing upon the lever, substantially as and for the purposes specified.

Signed by me this 18th day of May, A. D. 1883.

HENRY WILLIAM ATWATER.

Witnesses:

GEO. T. PINCKNEY,  
WILLIAM G. MOTT