

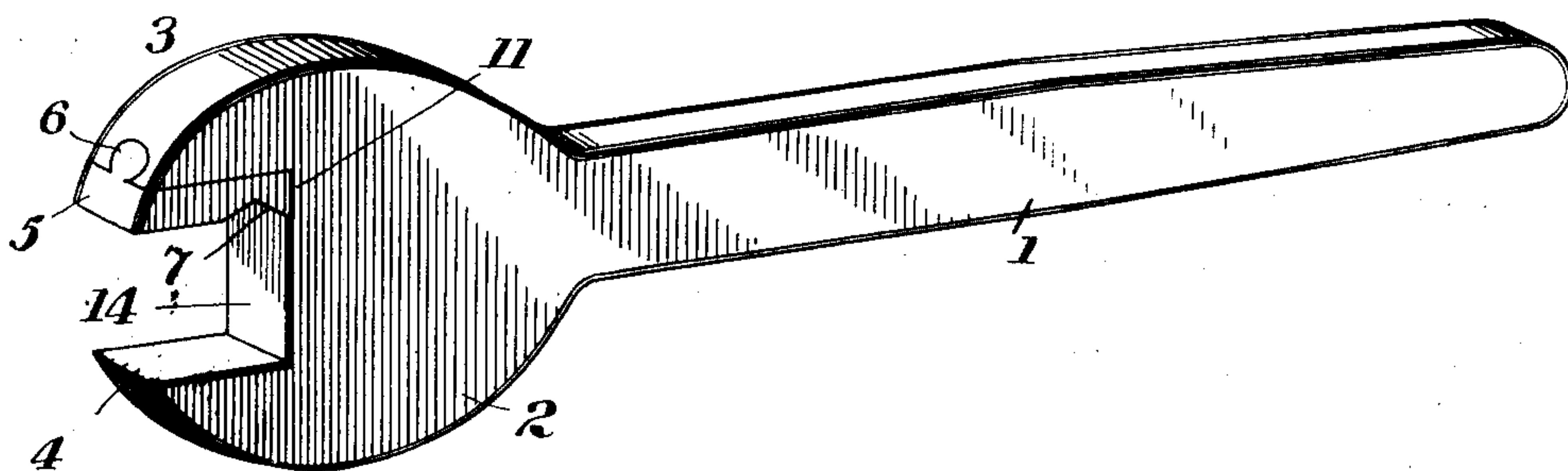
No. 879,155.

PATENTED FEB. 18, 1908.

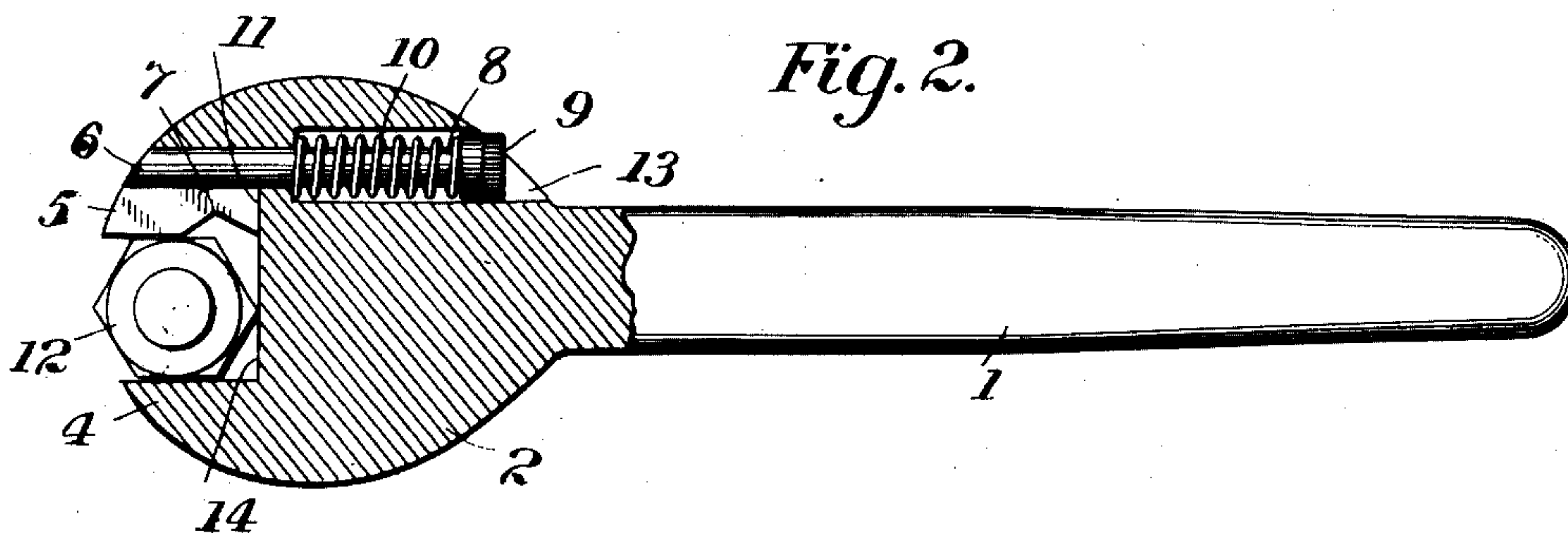
F. ELLIS.  
WRENCH.

APPLICATION FILED MAY 27, 1907.

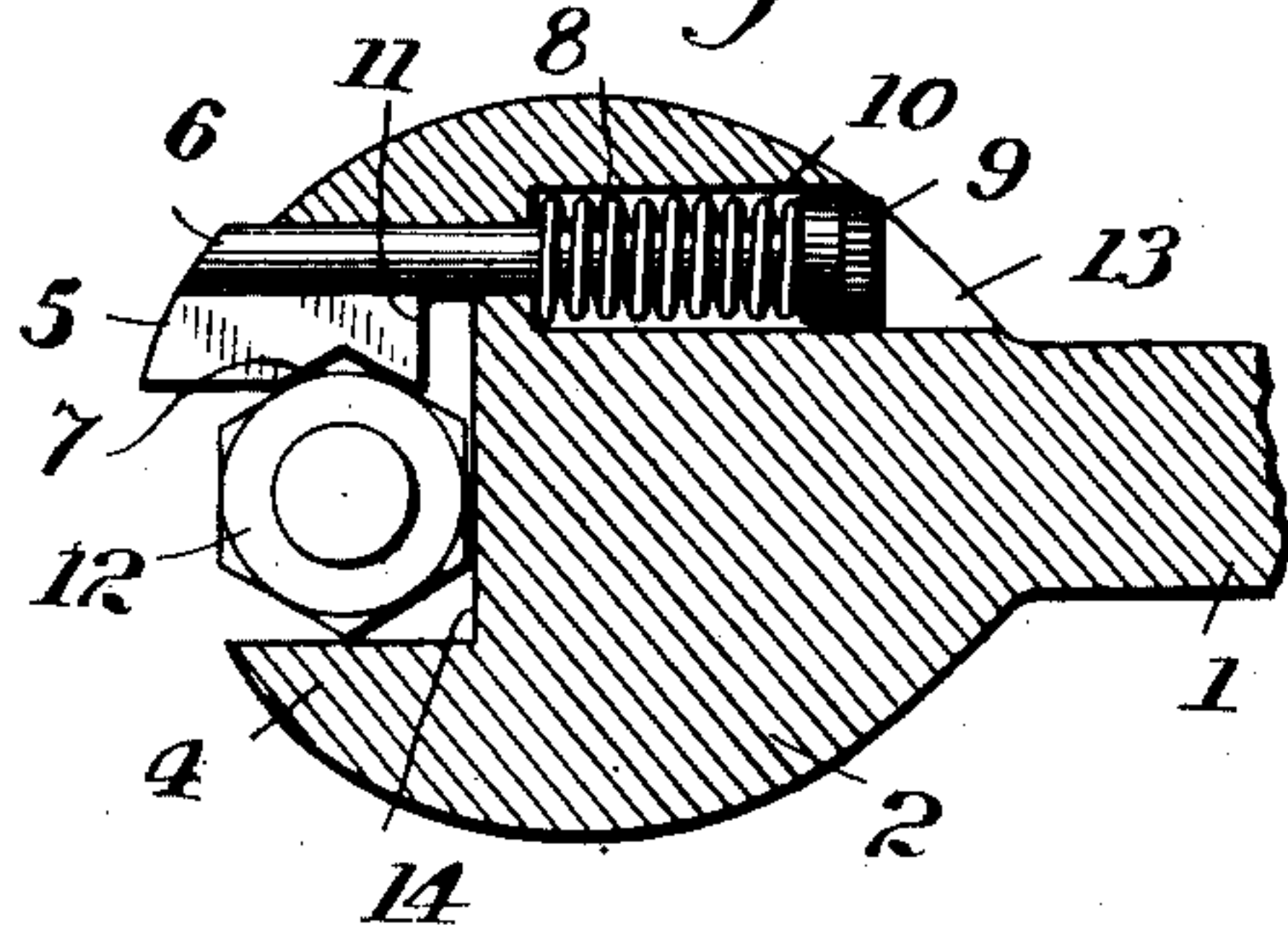
*Fig. 1.*



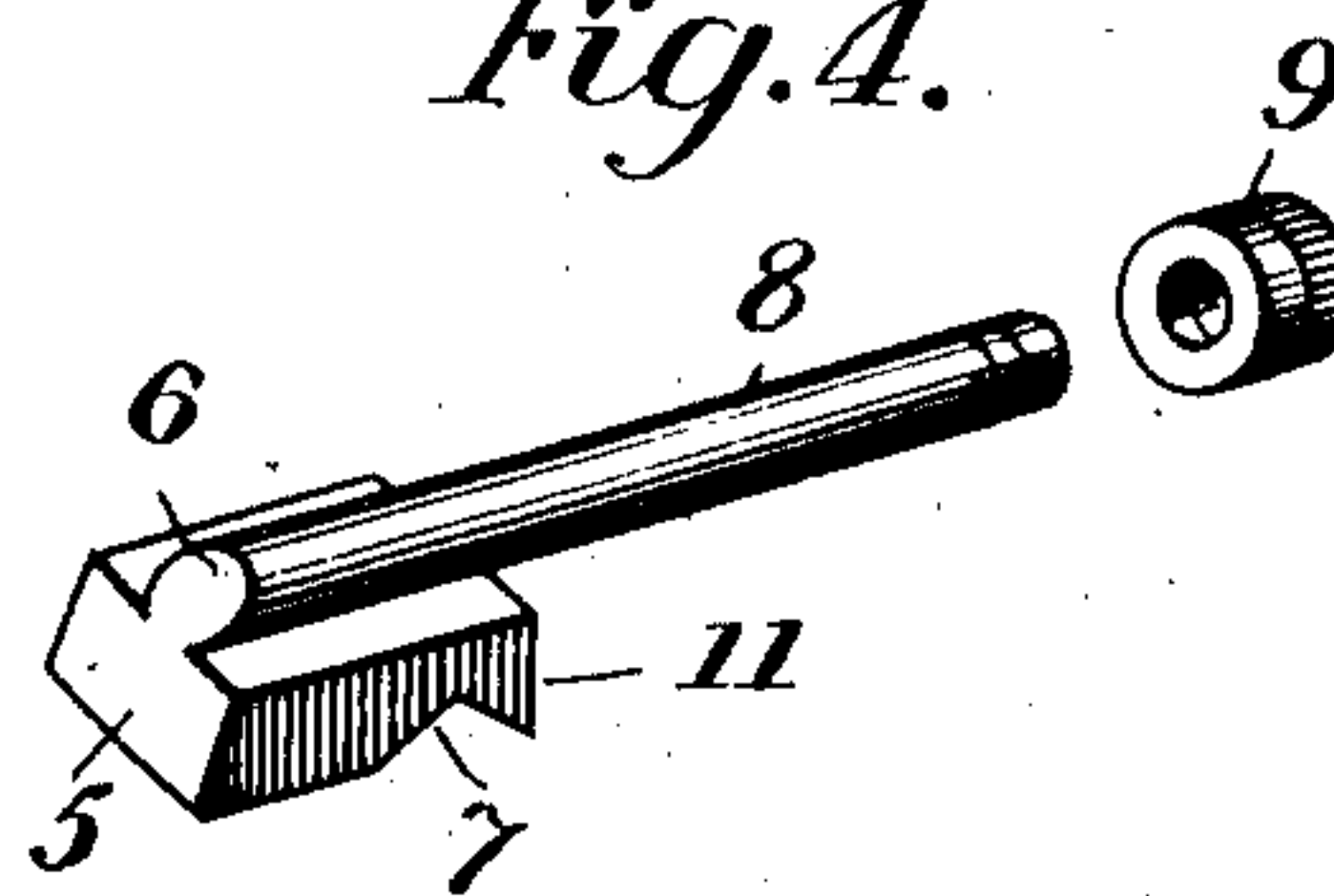
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRED ELLIS, OF FOURCHE, ARKANSAS.

## WRENCH.

No. 879,155.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed May 27, 1907. Serial No. 375,885.

*To all whom it may concern:*

Be it known that I, FRED ELLIS, a citizen of the United States, residing at Fourche, in the county of Perry and State of Arkansas, have invented new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to wrenches, and more particularly to that class known as ratchet wrenches, in which one jaw is movable.

The object of my invention is to provide a wrench of this character which shall be simple and strong, cheap to manufacture, and reliable in operation.

With the above and other objects in view my invention consists in the construction hereinafter described and illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of the complete wrench. Fig. 2. is a side elevation of the same, parts being broken away and shown in section. Fig. 3. is a similar section showing the parts in a different position. Fig. 4, is a perspective view of the sliding jaw or block.

My improved wrench is designed for use in connection with square or hexagonal nuts of standard construction, and is not to be confounded with pipe and similar wrenches having "alligator" jaws, as the operation is distinctly different.

Referring to the drawings in detail, my improved wrench comprises the usual handle 1, and bifurcated head 2, forming the jaws 3, 4. Lying against the inside of jaw 3 is a sliding head block 5, having formed integral therewith an undercut or dove-tailed spline, 6, adapted to fit in a corresponding groove in the jaw 3. As clearly shown in Fig. 4, this head block is of substantially rectangular shape, having a square shoulder 11, at its rear, which abuts against the rear wall 14, of the jaw opening. The spline 6, attached to the upper face of the block, terminates at its rear in a shank 8, adapted to pass through an opening into a cylindrical chamber, 13, formed in the head 2. A spring 10, surrounds the shank 8, and seats against the inner end of the chamber 13, and a nut 9, screws onto the end of shank 8, and confines the spring, holding the same under compression. This causes the shoulder 11 to normally lie against the wall 14, with the outer end of block 5 flush with the surface of jaw 3, as clearly shown in Fig. 2. In this po-

sition, a nut 12, to be turned, may be gripped between the inner face of block 5 and jaw 4, as in an ordinary wrench. The inner face of block 5, however, has formed therein a transverse notch, 7, of substantial V-shape, extending across the same, and by this means a ratchet action is secured.

When the outer end of the handle is moved upwardly (see Fig. 2) the block 5 will jam and the wrench will hold, turning the nut. When, however, the handle is moved down again, a corner of the nut enters the notch 7, as shown in Fig. 3, and, upon further movement, the sliding block is drawn outwardly, compressing the spring 10. This continues until the corner of the nut slips past the outer edge of the notch, and the block, urged by the spring 10, snaps back into position to engage the next succeeding face of the nut when the wrench is moved back again in the opposite direction. Thus it will be seen that by moving or swinging the handle of the wrench back and forth, a continuous rotation is imparted to the nut. The advantages of this method of operation are numerous and obvious, since it enables a nut to be turned up in crowded corners, where there is not sufficient space for a full sweep of the wrench, and this without the trouble of removing the wrench from the nut and catching a fresh hold at each stroke.

This form of wrench will be found particularly useful to trackmen, for tightening the nuts on rail joints, etc. By simply slipping the wrench over the nut, and then vibrating the handle back and forth, the trackman is enabled to set or release a nut easily and rapidly.

What I claim is:

1. In a ratchet wrench, a bifurcated head forming a pair of jaws, a sliding block fitted to one jaw, and provided with a transverse notch, and means for retracting said block when displaced from normal position.

2. In a ratchet wrench, a head having square faced jaws for the reception of a nut, one jaw carrying a sliding block having a transverse notch adapted to cooperate with a corner of said nut, said block being provided with a square shoulder arranged to abut against the rear wall of the jaw opening, and means urging said block against said rear wall.

3. In a ratchet wrench, a head having jaws, a sliding block fitted to one jaw, and having a spline secured thereto, terminating

behind in a shank, a cylindrical chamber,  
open at the rear, formed in said head, and  
into which said shank extends, a spring lying  
in said chamber and surrounding said shank,  
5 and a nut carried by the end of said shank,  
and adapted to slide within said chamber.

In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-  
nesses:

FRED ELLIS.

Witnesses:

WM. L. BOURLAND,  
J. E. WILLIAMS.