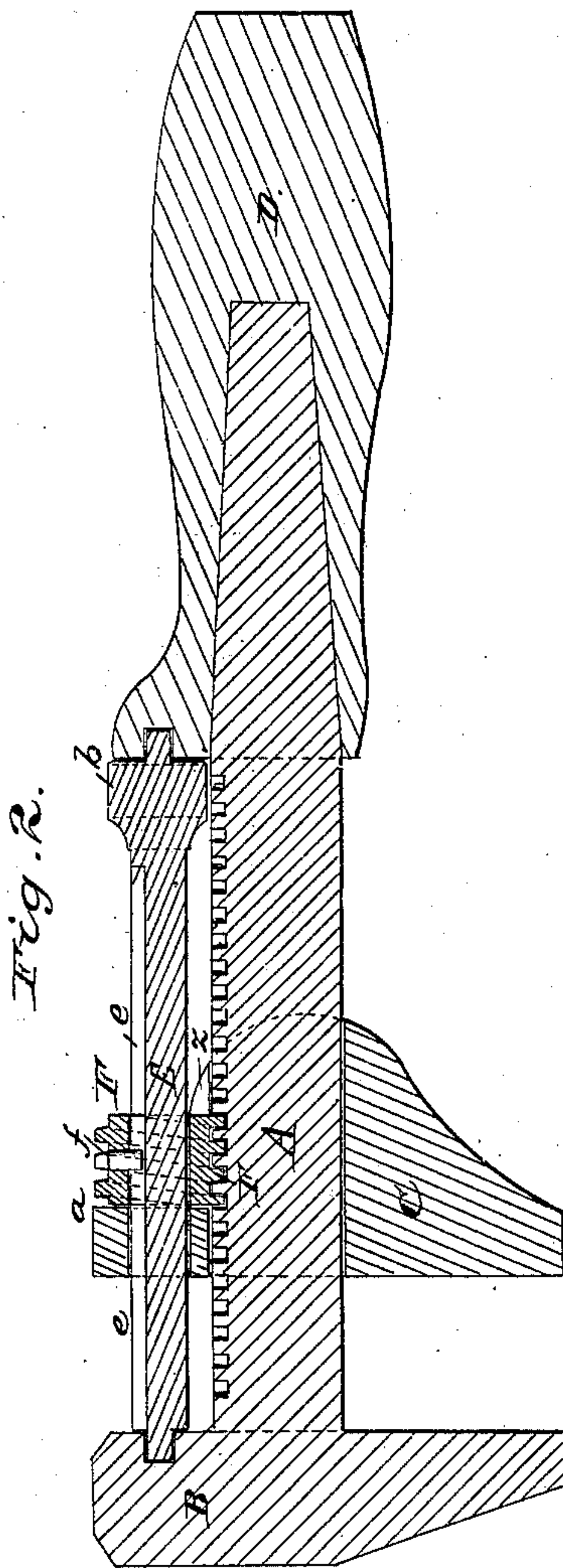
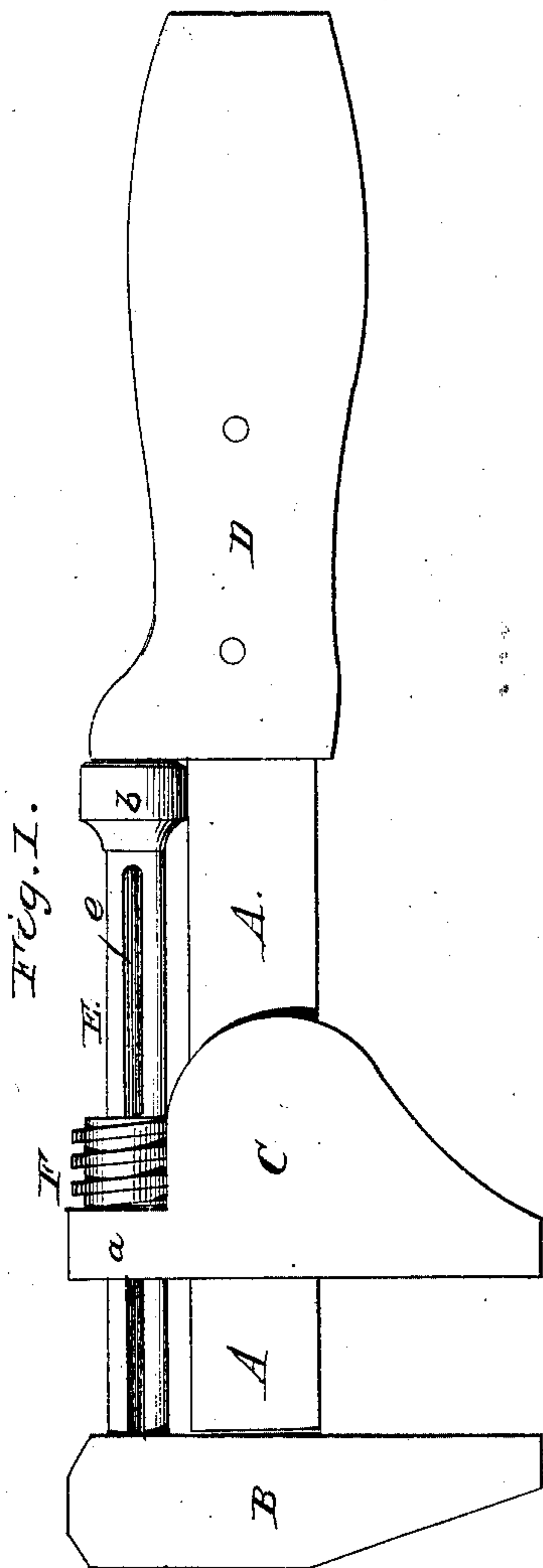


A. Storer,

Wrench.

N^o 56,460.

Patented July 17, 1866.



Witnesses:
E. R. Rung
M. M. Livingston

Inventor.
Atkins Storer.

UNITED STATES PATENT OFFICE.

ATKINS STOVER, OF NEW YORK, N. Y.

IMPROVEMENT IN SCREW-WRENCHES.

Specification forming part of Letters Patent No. 56,460, dated July 17, 1866.

To all whom it may concern:

Be it known that I, ATKINS STOVER, of the city, county, and State of New York, have invented a new and useful Improvement in Screw-Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a novel manner of operating the movable jaw of a screw-wrench.

In the accompanying drawings, Figure 1 is a side elevation of a wrench with my improvement applied thereto. Fig. 2 is a longitudinal central section of the same.

Similar letters of reference indicate corresponding parts.

A designates the bar of the wrench. B is the stationary jaw; C, the movable jaw, and D the handle. The movable jaw C is fitted to slide upon the bar A, and it has a projection, *a*, formed upon its rear end, through which passes a rod, E, having its bearings for its respective ends in the stationary jaw and in the back of the handle.

F is a worm fitted to travel upon the rod E. The thread upon this worm engages with a screw-thread cut at the bottom of a shallow groove made in the back of the bar A. This groove enables the worm to sink a short distance therein, so that it will occupy less room on the back of the bar. A slot, *e*, is made in the rod E in the direction of its length, and for nearly the whole of its length, and in this projects a pin, *f*, which is secured to the worm F.

The movable jaw is so formed that the worm F is partly in a cavity in its rear end—that is to say, the worm is so confined by the jaw that it cannot be moved in either a forward or backward direction along the rod E without its moving the jaw C in the same direction, as will be understood by reference to Fig. 1, where the parts of the jaw which project upon either side of the worm are desig-

nated by the letters *a* and *z*, and the pin *f* and groove *e* are clearly shown.

The operation of this wrench is very simple and easily understood. In order to move the jaw C in either direction, it is merely necessary to revolve the rosette *b* upon the rod E by the thumb and forefinger in the usual manner. This causes the worm to revolve by reason of the pin *f* working in the groove *e*, and thus the jaw is operated.

The worm is not likely to jam in any way, and with it the jaw can be moved as rapidly, if not more rapidly, than in wrenches where the jaw is operated by a screw-thread cut upon the rod which works in a socket made in the movable jaw.

A wrench thus constructed possesses great strength. The rear end of the movable jaw is well supported, and the mode of operating it by the worm is very easy, and the wrench is not liable to be unduly strained as to any of its parts or impaired by continued use.

I have shown the worm F as fitted upon a rod, E, located upon the back of the wrench, and I will here remark that it can be arranged upon a rod running from the forward end of the movable jaw to the handle and working in a screw-thread cut upon the front of the bar of the wrench.

What I claim as new, and desire to secure by Letters Patent, is—

1. The traveling worm F, fitted upon the rod E and working in a screw-thread made upon the back of the bar of the wrench, in combination with the movable jaw C and bar A, substantially as specified.

2. The combination of the rod E, worm F, slot *e*, pin *f*, movable jaw C, bar A, and stationary jaw B, substantially as shown and described.

ATKINS STOVER.

Witnesses:

E. R. RING,
M. M. LIVINGSTON.