

(No Model.)

J. T. HAYDEN.

PIPE WRENCH.

No. 335,193.

Patented Feb. 2, 1886.

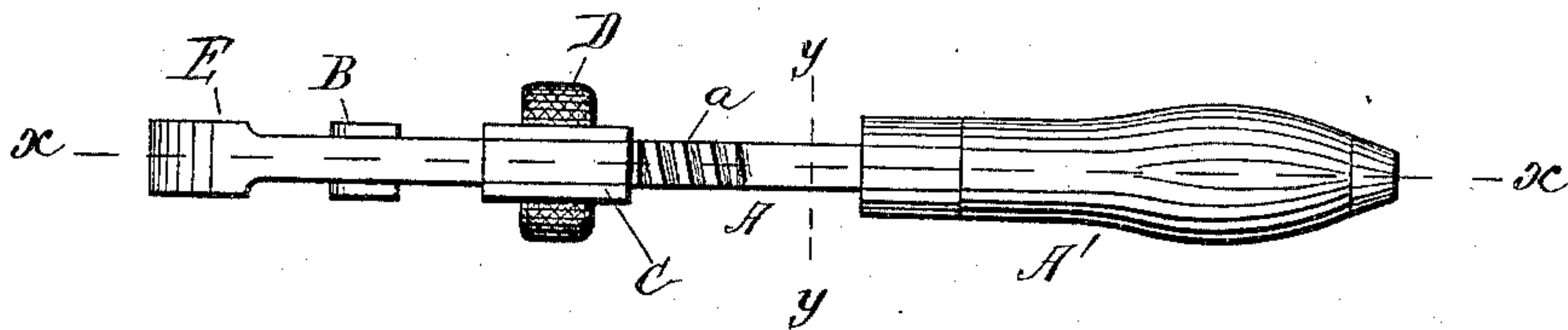


Fig 1

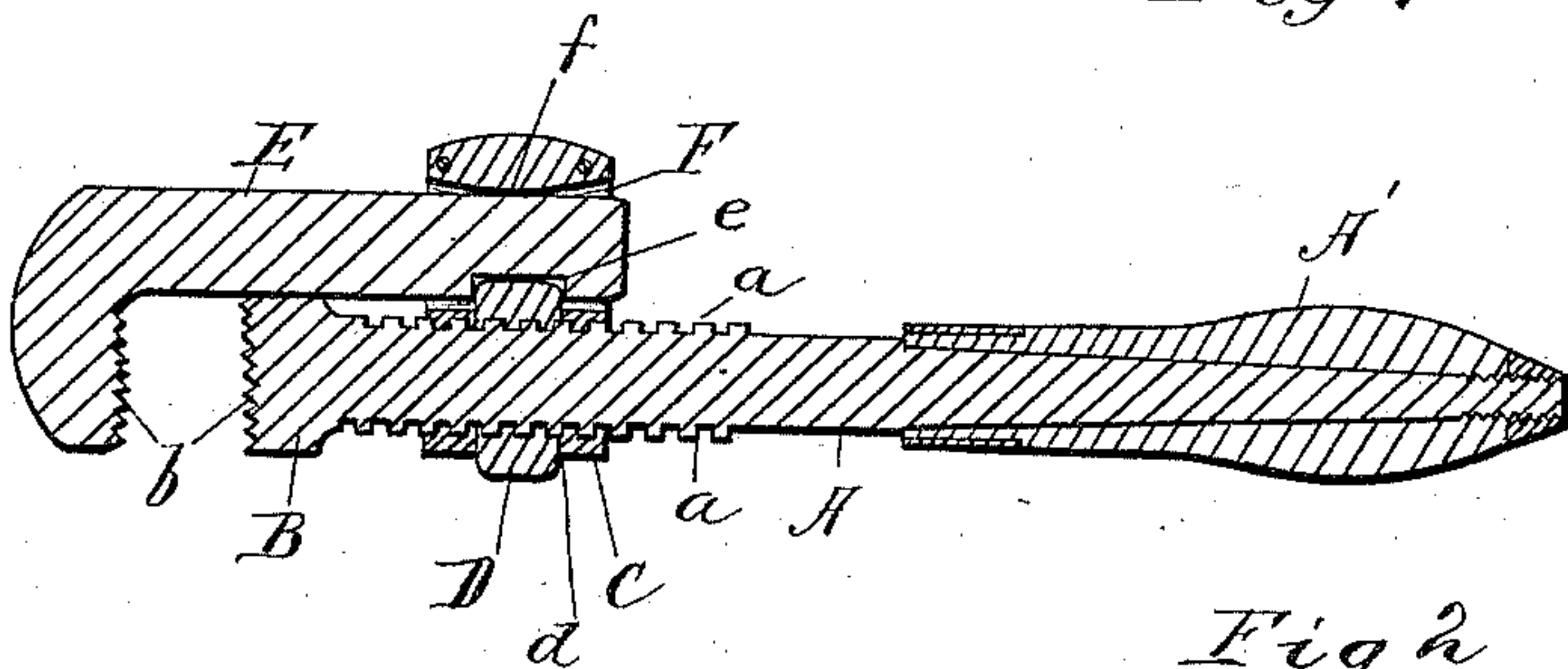


Fig 2

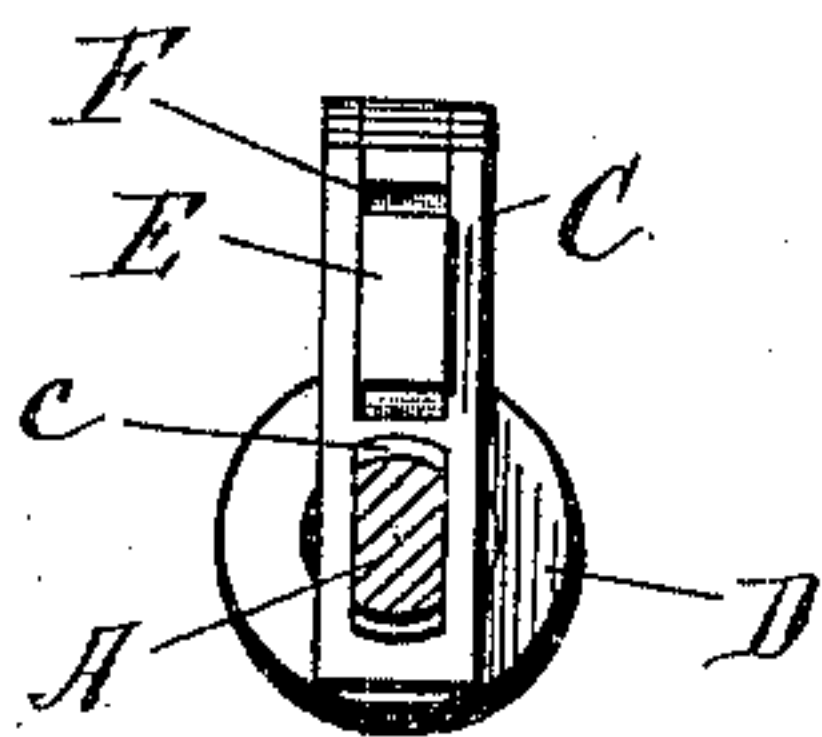


Fig 3

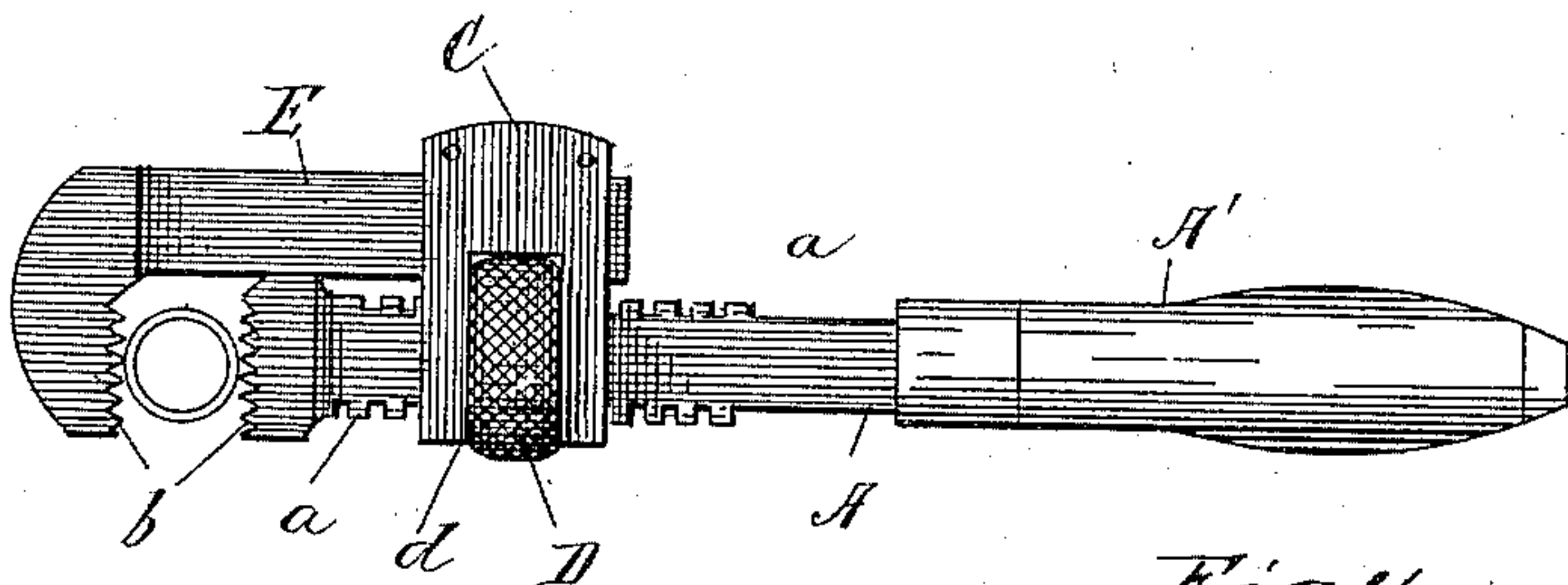


Fig 4

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES T. HAYDEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO RICHARD T. CRANE, OF SAME PLACE.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 335,193, dated February 2, 1886.

Application filed November 14, 1885. Serial No. 182,884. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HAYDEN, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Pipe-Wrenches, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a pipe-wrench embodying my invention; Fig. 2, a longitudinal section of the same, taken on the line *xx* of Fig. 1; Fig. 3, a transverse section, taken on the line *yy* of Fig. 1; and Fig. 4 a side elevation.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to pipe-wrenches, it being in the nature of an improvement upon the invention set forth in Letters Patent No. 241,490, granted to me May 17, 1881, and has for its object the production of a wrench which shall be more simple and durable in its construction and more effective in its operation.

To these ends my invention consists in certain novel features, which I will now proceed to describe, and then particularly point out in the claims.

In the drawings, A represents the shank or stem of the wrench, which consists of a flat bar provided upon its edges with a screw-thread, *a*, and having at one end a suitable handle, A', and at the other end the fixed jaw B. This fixed jaw is provided with teeth or serrations *b*, to properly hold the pipe. Upon the stem A is mounted a sliding block or frame, C, provided with an aperture, *c*, corresponding to the dimensions of the stem, so that the said block may slide upon the said stem.

D represents a thumb-nut threaded internally to fit upon the screw-thread *a* of the stem A and mounted in a slot, *d*, in the block C at right angles to the recess *c*, as shown in the several figures of the drawings.

E represents the vibrating jaw of the wrench, which is provided with serrations *b*, similar to those on the fixed jaw. The lower end of the vibrating jaw E extends into and through a recess, F, in the block or frame C, and is provided with a notch or seat, *e*, into which the thumb-nut G projects, as clearly shown in Fig.

2 of the drawings. The periphery of the thumb-nut is rounded off, as shown, to permit the vibration of the said jaw E, and the wall *f* of the recess F on the opposite side is similarly rounded, as shown in Fig. 2 of the drawings, for the same purpose. This wall is preferably formed by means of a separate block secured in place in any suitable manner in the frame C, in order that the parts of the wrench may be readily assembled and taken apart when desired.

The operation of my improved wrench is sufficiently obvious from the preceding description. The rotation of the thumb-nut D will move the block C and vibrating jaw E in either direction, as desired, so as to bring the said jaw to a distance from the fixed jaw corresponding to the size of pipe which it is desired to operate upon. As soon as the wrench is applied to the pipe any pressure applied to the handle or stem thereof will cause the vibrating jaw to tend to approach closer to the fixed jaw in a manner common to pipe-wrenches of this general description, and will cause the wrench to grasp the pipe with a grip proportionate to the amount of power applied thereto. The vibrating jaw is not pivoted to the sliding block, but works therein upon two fulera, the rounded periphery of the nut D forming one fulcrum while the reversely-rounded wall *f* of the recess F in the block forms the other fulcrum.

In the construction set forth in the Letters Patent hereinbefore specified, to which reference is made for a description thereof, the entire strain of the power applied to the wrench comes directly upon the ratchet-teeth of the vibrating jaw and the thread of the worm, and tends to rapidly wear and eventually break the said teeth and thread. This difficulty is overcome in the construction hereinbefore set forth, the strain being so distributed as to relieve the thread and preserve the same, thus greatly increasing the durability of the wrench. Moreover, in the construction set forth in the Letters Patent, any adjustment of the vibrating jaw causes a variation in the distance of the jaw proper from the fulcrum, and consequently a difference in the length of the lever and in the power of the leverage. In my improvement, on the other hand, the distance from the

fulcrum to the jaw proper or gripping-surface of the vibrating jaw is constant, and the leverage is therefore constant also.

It is obvious that various modifications in the details of construction may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself strictly to the precise details hereinbefore described and shown in the drawings.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the threaded stem, of the block mounted to slide thereon, the nut mounted in the block to operate the same, and the vibrating jaw fulcrumed in the block and provided with a notch or recess to receive the

nut, whereby it is held in position, substantially as and for the purposes specified.

2. The combination, with the threaded stem A, of the block F, mounted to slide thereon, the nut D, mounted on the threaded stem and arranged in a slot in the block, said nut being provided with a curved periphery, and the vibrating jaw E, arranged in a recess in the block, which recess has a rounded wall, *f*, at one side, the said jaw being provided with a notch, *e*, to receive the nut D on the opposite side, substantially as and for the purposes specified.

JAMES T. HAYDEN.

Witnesses:

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