

(No Model.)

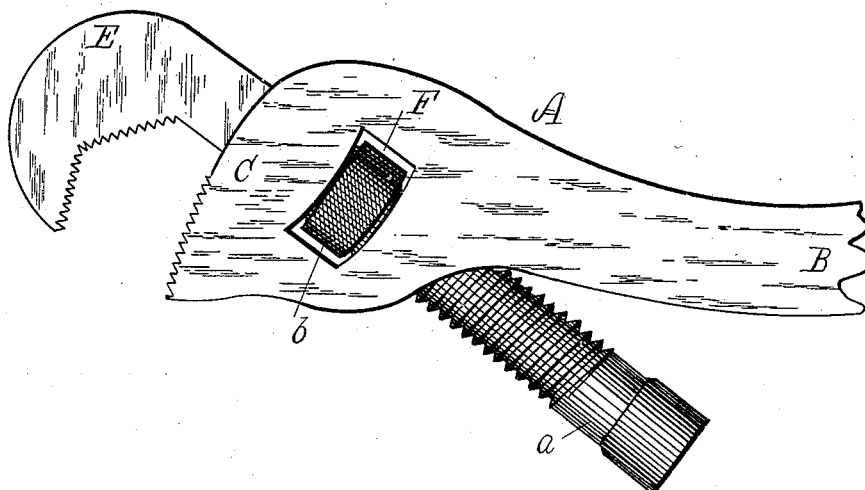
G. E. FRANKLIN.

PIPE WRENCH.

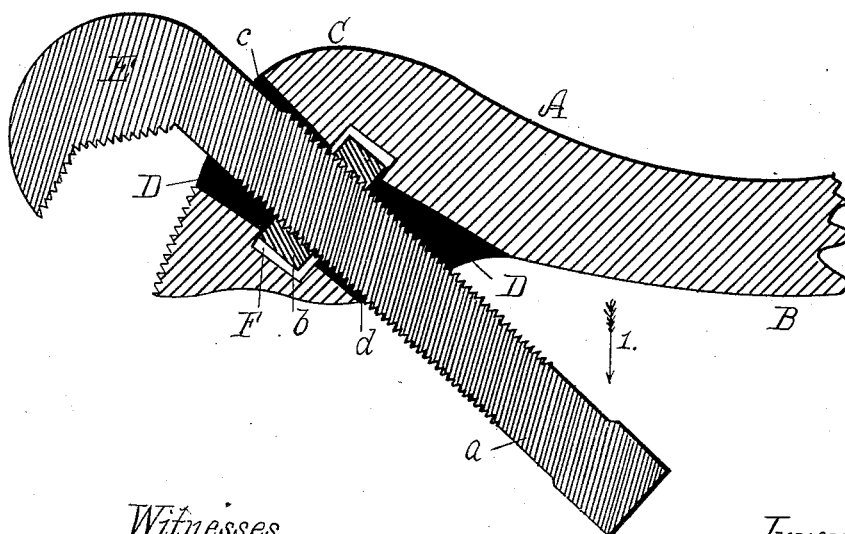
No. 345,777.

Patented July 20, 1886.

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

GEORGE EDWIN FRANKLIN, OF NATICK, MASSACHUSETTS.

## PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 345,777, dated July 20, 1886.

Application filed January 22, 1885. Serial No. 153,615. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE EDWIN FRANKLIN, a citizen of the United States, residing at Natick, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pipe-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to "pipe-wrenches," so called; and it consists in forming an enlargement or head at the extremity of the shank or stock, and in the arrangement therein of a movable jaw angularly disposed with the central axis on line of said shank; and, furthermore, in the construction of two slots, in one of which the movable jaw moves, and in the other is inserted a nut interiorly screw-threaded, which receives and retains said jaw.

Hitherto in pipe-wrenches the movable or adjustable jaw has been disposed parallel with the axis of the stock or shank carrying the fixed jaw, and generally upon the top side thereof. This has been attended with objections, since in opening the jaws to fit it upon the pipe its rear end must be caused to approach the stock in lieu of moving away from it. Moreover, in wrenches of the above construction a spring is employed to maintain the jaw back against gravity in fitting the apparatus to a pipe, and both hands of the workman are employed—one to overcome the tension of the spring and maintain the jaw in contact with the pipe and the other to actuate the adjusting-nut.

Further advantages in the construction and employment of the pipe-wrench embodying my invention will be more fully hereinafter explained.

The drawings accompanying this specification represent, in Figure 1, a side elevation, and in Fig. 2 a longitudinal section, of a pipe-wrench embodying my invention.

In the drawings, A represents a wrench, in which the handle or stock is shown at B, and at its outer extremity expands into a head, C.

On this are formed the usual corrugations, of a shape suitably adapted for turning pipe or other similar articles.

Hitherto wrenches have usually been made with a stationary frame laterally disposed, and to which is secured the screw-threaded nut which actuates the shank of the movable jaw moving therein. In such construction the stationary frame is so disposed as to remove the jaw somewhat from the shank of the stock, in order to allow the rear end of the movable jaw to approach said stock in the rocking movements of the latter necessary to obtain a hold upon the article to be turned. This complicates the number of parts, and thereby renders the cost of the tool more expensive than otherwise. To obviate these objections, among others, I form in the head C a slot or opening, D, in alignment with the longitudinal axis of the stock, but at an angle of about sixty degrees transversely of it. This slot is smallest at the center, and extends entirely through the head, spreading or enlarging at each end, as shown at *c d*. Furthermore, in this opening I dispose the shank *a* of the movable jaw E, while to retain the latter in place a second slot, F, is formed at right angles to the first, and receives the nut *b*, the latter turning upon a peripheral screw-thread cut upon the shank *a*. This opening F is to be made slightly larger than the nut *b*, which, when the tool is actively employed, serves two purposes: First, it retains the movable jaw in place within the head C of the stock B, acting as a central pivot, upon which the jaw swings, and, secondly, adjusts the jaw to various sizes of pipes by being rotated within its slot.

This wrench is very efficient in its work, and very cheaply made, inasmuch as it is composed of but three parts—the stock B, the movable jaw E, and the adjusting-nut *b*. The stock B, with its head C, containing the openings D F, is cast integral, and after the jaw has been peripherally screw-threaded the nut is placed in its proper position in the opening F, and the end of the shank *a* is entered thereon by rotation of the nut. This act secures the latter in place. The movable jaw is maintained within the head of the wrench-stock, and the article is completed.

It will be understood from the way in which

these wrenches are operated that after fitting the movable jaw to the pipe a pivoted rocking motion is required to obtain the required grip, on the principle of a "cant-lever," so called. I obtain this effect by forming the opening F, which has the form of the arc of a circle, slightly larger than the nut, as the latter is the center of rotation, and but little movement is required, while to allow the jaw to swing upon the nut as a pivot I have flared both ends *cd*, as before premised of the opening D in the head C.

By reference to Fig. 2 some of the advantages of disposing the movable jaw angularly with respect to the shank of the fixed jaw will readily be observed. When holding the wrench in an active position, owing to the adjustment of the jaw in the head, gravity is always exerted; but, furthermore, when opening the jaw, since the rear end moves away from the shank, a slight pressure from the thumb of the operator in the direction of arrow 1 serves to hold it back, since I have dispensed with the use of a spring, while the fingers of the same hand may be employed to actuate the nut. The other hand is thus free to be used in grasping or steadying the pipe. Moreover, in case the wrench is reversed to grasp the pipe from below, the same action takes place by gravity, and no pressure is required, since the movable jaw, in lieu of being parallel, is always angularly disposed therewith, and hangs away from the pipe until the nut is properly adjusted.

I am aware that it is not new to employ a movable jaw having a shank parallel to that of the fixed jaw, and a nut which engages the screw-threaded shank of said movable jaw, and turns in a recess of an attachment of said fixed jaw. I am also aware that it is not new to employ a slotted movable jaw which is pivoted on a stud attached to the fixed jaw, and provided with an adjusting-nut that turns in an opening in the latter, the shank of the movable jaw being capable of taking an oblique position, but not held permanently thereto. I do not claim either of these devices; but

What I do claim is—

The movable jaw E, having a screw-threaded shank, in combination with the nut *b*, which turns on said shank, and the fixed jaw, which is provided with head C, having an oblique passage or opening, D, which is enlarged at each end to allow play of jaw E, and the opening F, which receives nut *b*, and extends beyond the same, having the shape of the arc of a circle to allow slight motion of nut *b* with jaw E, while permitting said nut to act as a pivot, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE EDWIN FRANKLIN.

Witnesses:

H. E. LODGE,  
A. F. HAYDEN.