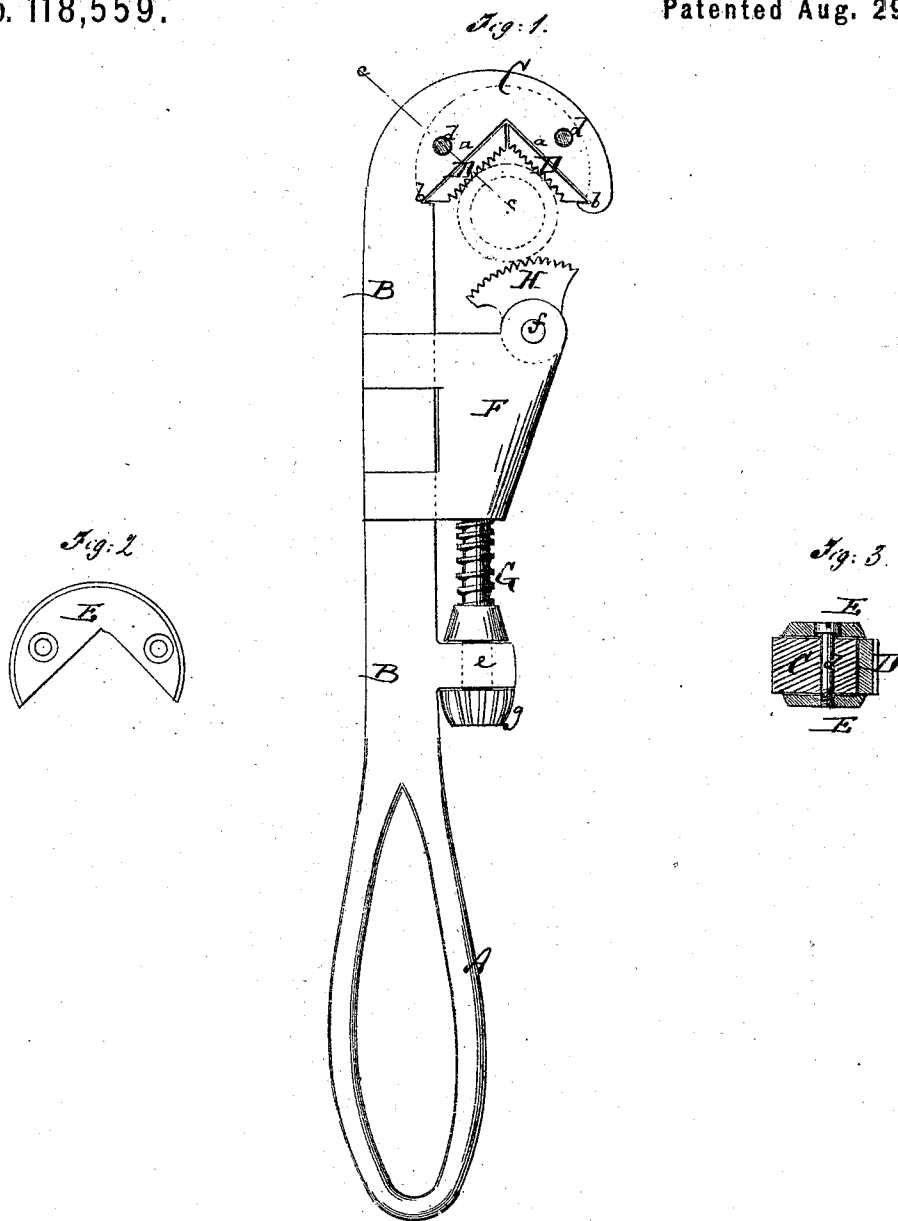


[45.]

H.N. Smade's Pipe Wrench.

No. 118,559.

Patented Aug. 29, 1871.



Witnesses:

Chas. Nida
Gustave Dietrich

Inventor:

H.N. Smade.
PER *Munn & Co.*
Attorneys.

UNITED STATES PATENT OFFICE.

HIRAM N. SMADE, OF MANISTEE, MICHIGAN.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. 118,559, dated August 29, 1871.

To all whom it may concern:

Be it known that I, HIRAM N. SMADE, of Manistee, in the county of Manistee and State of Michigan, have invented a new and Improved Pipe-Wrench; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side view of my improved pipe-wrench. Fig. 2 is a detail side view of the stationary jaw-fastener. Fig. 3 is a transverse section on the line *c c*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new pipe-wrench of the kind where the movable jaw is pivoted to a sliding sleeve; and consists particularly in the mode of fastening the stationary jaws.

A in the drawing represents the handle; B, the main shank; and C, the stationary jaw-holder. All these three parts may be made in one piece, as shown, or united from separate sections. The jaw-holder C is like a hook on the shank B, with a double-inclined inner edge, *a*, as is clearly shown in Fig. 1. D D are two fixed jaws. They are plates, made of steel or other hard material, with roughened or corrugated inner faces. They are respectively placed against the inclined edges *a*

a, rest on shoulders *b* that are formed on the hook C, and meet at their upper ends. Plates E E are secured against the sides of the hook C and fastened by bolts *d*, which pass through them and the hook, as in Fig. 3. These plates E, by partly lapping over the jaws D, prevent them from falling from the hook C. F is the movable sleeve sliding on the stem B, and operated by a screw, G, which is swiveled in a projecting ear, *e*, of the handle. H is the movable jaw, pivoted to the upper part of the sleeve F. The pivot-pin *f* of the jaw H may be made in form of a screw, so that said jaw can be clamped fast in any desired position after having once been adjusted for a certain size of pipe. By the arrangement of the jaws shown the pipe is clamped on three sides, and thus securely held. The lower end of the screw G, below the ear *e*, has a milled knob, *g*, so that it can be conveniently turned by the same hand which grasps the handle.

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

The fixed jaws D D, placed against the inclined edges *a* upon the shoulders *b*, and held in place by the plates E, substantially as herein shown and described.

HIRAM N. SMADE.

Witnesses:

A. T. MCKAY,
SAMUEL S. CONOVER.