(No Model.)

P. M. KNOPP.

PIPE WRENCH.

No. 557,587. Patented Apr. 7, 1896.

Fig I

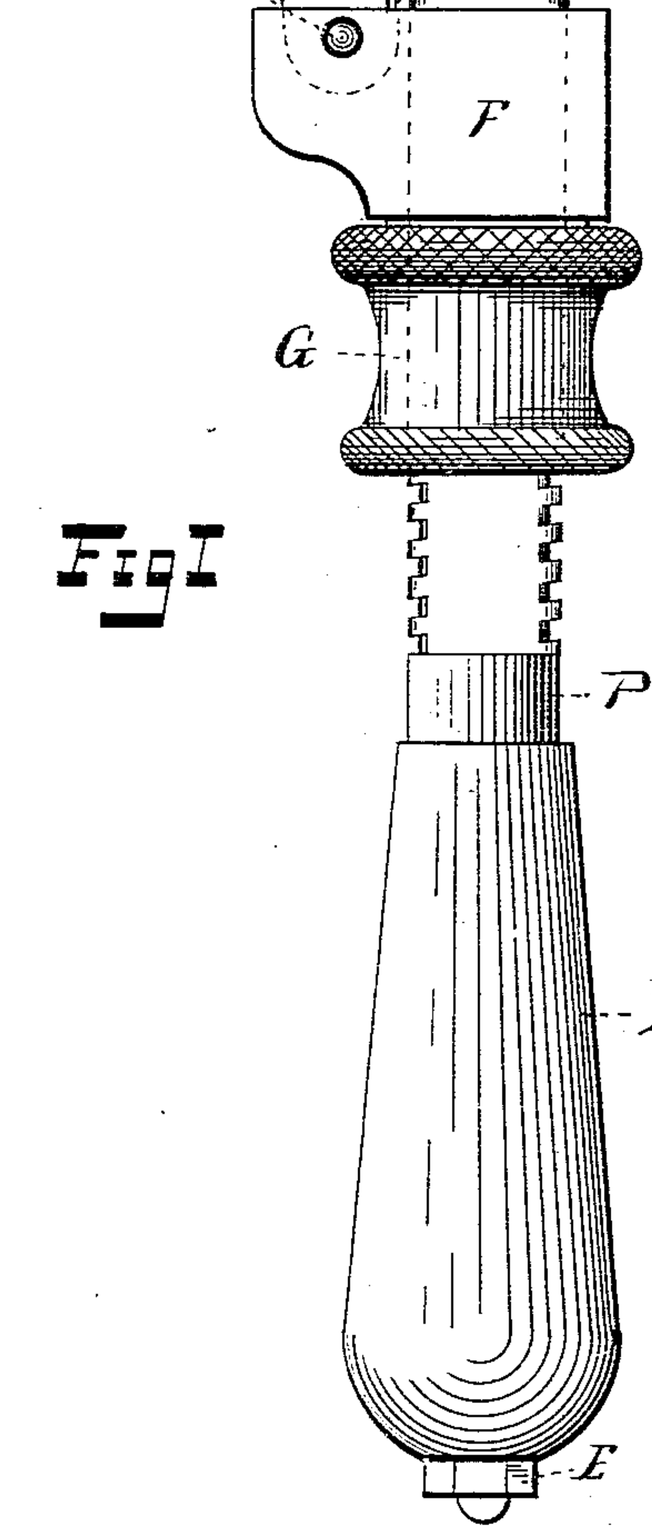

Fig III

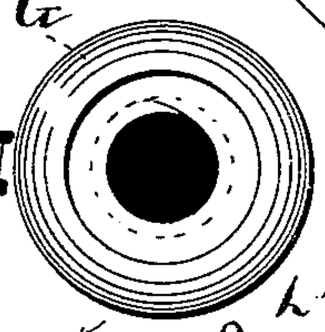

Fig IV

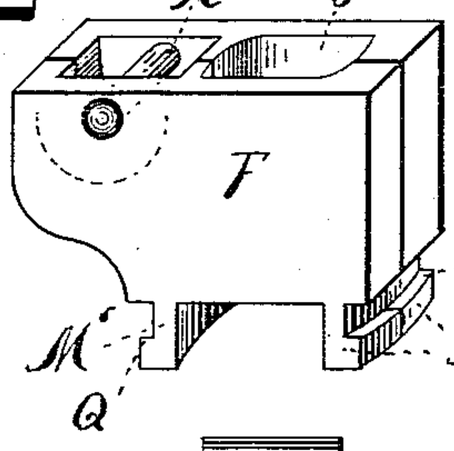

Fig V

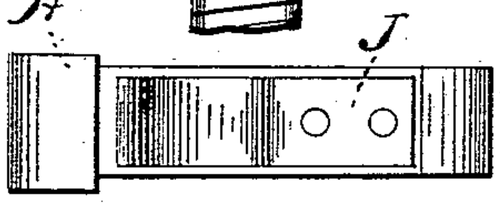

Fig II

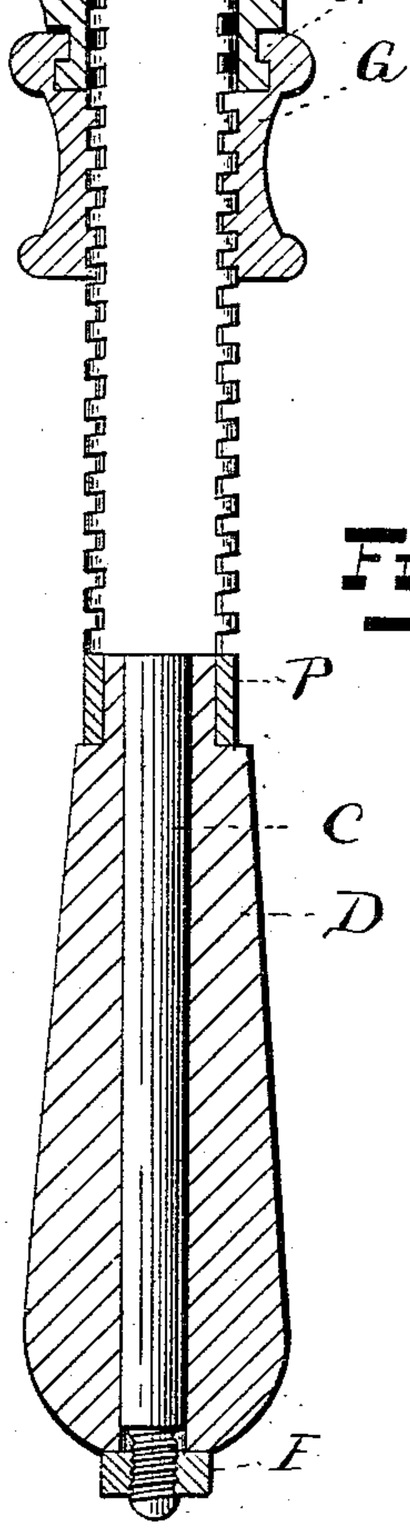

Fig VI

Witnesses.
Geo. C. Strode
William Smith

Inventor.
Peter M. Knopp.
By House and Hadley.
His Attorneys.

UNITED STATES PATENT OFFICE.

PETER M. KNOPP, OF KANSAS CITY, MISSOURI.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 557,587, dated April 7, 1896.

Application filed August 6, 1895. Serial No. 558,393. (No model.)

To all whom it may concern:

Be it known that I, PETER M. KNOPP, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in pipe-wrenches.

The object of my invention is to provide a pipe-wrench having one fixed and one movable jaw, a shank at one end of which is the fixed jaw, a sleeve longitudinally movable upon the shank and having the movable jaw hinged thereto, means for holding the free end of the pivoted jaw normally out of its working position, and means for changing the relative position of the jaws with respect to each other, so that the jaws may be adapted to engage different sizes of piping.

My invention consists, further, in certain peculiarities of construction, hereinafter fully described, and set forth in the claims.

In the accompanying drawings, illustrative of my invention, Figure 1 represents a side elevation of the wrench, showing it engaging a pipe. Fig. 2 represents a side view, partly in elevation, with the handle, sleeve, clip I, and adjusting-nut G shown in section. Fig. 3 represents a top view of the nut G. Fig. 4 represents in perspective the two-part sleeve. Fig. 5 represents a rear view of the wrench with the handle and a portion of the shank removed. Fig. 6 represents a rear view of the movable jaw with the clip I detached and the spring J in position on the jaw.

Similar letters of reference indicate similar parts.

A designates the shank of the wrench of the ordinary pattern, the main portion being substantially rectangular in cross-section and the upper end bent to one side so as to form the fixed jaw B, the lower side of which is substantially perpendicular to the shank and is provided with transverse serrations that form the teeth of the jaw. The lower portion of the shank at C is cylindrical in form and fits in a longitudinal opening in a wooden handle D. The extreme lower end of the portion C is shouldered and externally screw-threaded and is provided with a nut E, which abuts against the lower end of the handle D and holds it firmly upon the shank. Upon the upper end of the handle D and abutting against the shouldered rectangular portion of the shank is a cincture or ferrule P. The sleeve F is substantially rectangular in cross-section and is provided with a longitudinal opening O, to which the shank is movably fitted. The left side of the sleeve extends considerably beyond the shank and is provided in its upper side, the one adjacent to the fixed jaw, with a semicylindrical recess L, transversely located with respect to the opening O and the ends of which are closed by the sides of the sleeve. The lower end of a movable jaw H is pivoted within the recess L and is so formed at the end that it has a bearing against the wall of the recess. A pintle K is fitted in a transverse opening near the lower end of the jaw H, the ends of the pintle being secured in transverse openings in the sides of the sleeve F. The upper end of the jaw H is provided with transverse serrations which serve as teeth. The said teeth lie in a plane substantially perpendicular to the shank A when the jaw H is in the closed position shown in Fig. 1. Secured to the side of the jaw H, adjacent to the shank A at one end, is a flat spring J, so curved as to press against the left side of the shank A, thus tending to keep the jaw H normally in the position shown in Fig. 2. The jaw H is provided with a recess, within which the spring J may lie when the jaw is closed. A clip I, the sides of which are parallel, passes around the shank A and has its ends secured to and near the upper end of the jaw H. The clip is substantially U-shaped, the upper edges of the arms lying in the arc described from the center of the pintle K. The clip has the arms of sufficient length to permit the jaw H to open to the distance required.

A nut G, cylindrical in shape, is provided with a vertical screw-threaded opening fitted to a screw-threaded portion of the shank A, which extends for a considerable distance above the handle D far enough to permit a sufficient closing of the jaws when the nut is turned in the proper direction. The nut G is provided in its upper end with a circular central recess or groove, larger in diameter

than the largest diameter of the threaded portion of the shank A, and into which is revolubly fitted the curved flanges Q, externally located at the lower edge of each of the projections M M′. The projections M M′ are located to the right and left, respectively, at the lower end of the sleeve F, the inner sides of the projections being fitted to the edges of the shank A. The upper end of the nut G around the circular recess referred to is provided with an inwardly-extending flange N, which is fitted to the grooves formed by the flanges Q and the body of the sleeve F. The sleeve F is made in two sections, the dividing-line being the longitudinal center of the sleeve. The two parts of the sleeve are held together by means of the pintle K and the nut G, which encircles the projections M M′.

My invention is operated as follows: By turning the nut G in the proper direction the jaws are brought to approximately the proper distance apart to grasp the pipe. Pressure is then applied to the wrench in a direction that will tend to force the pipe farther in between the jaws. This will cause the movable jaw to swing toward the shank, shortening the distance between the jaws and causing the jaws to more firmly grasp the pipe. Any movement toward the left, as viewed in Fig. 1, will cause the jaws to hold the pipe more firmly than before, but by moving the handle in the contrary direction the jaws immediately release their tight grip on the pipe. By placing the wrench upon the opposite side of the pipe to that shown in Fig. 1 the operation of the jaws on the pipe is reversed, so that the pipe may be turned to the right or left by a proper application of the wrench.

Various departures from the construction herein shown and described may be made without departing from the spirit of my invention.

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

1. In a wrench, the combination with a shank having a fixed jaw, of a sleeve longitudinally bisected and movable lengthwise on the shank, a rivet securing the two parts of the sleeve together, a jaw pivoted to the rivet and movable toward and from the shank and fixed jaw at one end, a nut having a screw-threaded connection with the shank and engaging the sleeve whereby the sleeve is moved lengthwise on the shank when the nut is rotated, substantially as described.

2. In a wrench, the combination with a shank having a fixed jaw, of a sleeve movable lengthwise on the shank and provided with the recess, L, the jaw H pivoted in the said recess, the spring, J, the clip, I, embracing the shank and secured to the jaw, H, and means for locking the sleeve at any desired position on the shank, substantially as described.

3. In a wrench, the combination with a shank having a fixed jaw, of the sleeve F movable lengthwise thereon and provided with the grooved projections, M, M′ and recess, L, the jaw, H, pivoted in the recess L by means of the pintle K, the spring J secured to the jaw, H, and operating against the shank, the nut, G, having a screw-threaded connection with the shank and provided with the circular flange, N, engaging with the sleeve in the grooved projections, M, M′, substantially as described.

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

PETER M. KNOPP.

Witnesses:
WARREN D. HOUSE,
W. J. SMITH.