No. 610,831. Patented Sept. 13, 1898.

O. F. ROBERTS.

PIPE WRENCH.

(Application filed Jan. 26, 1898.)

(No Model.) 2 Sheets—Sheet 1.

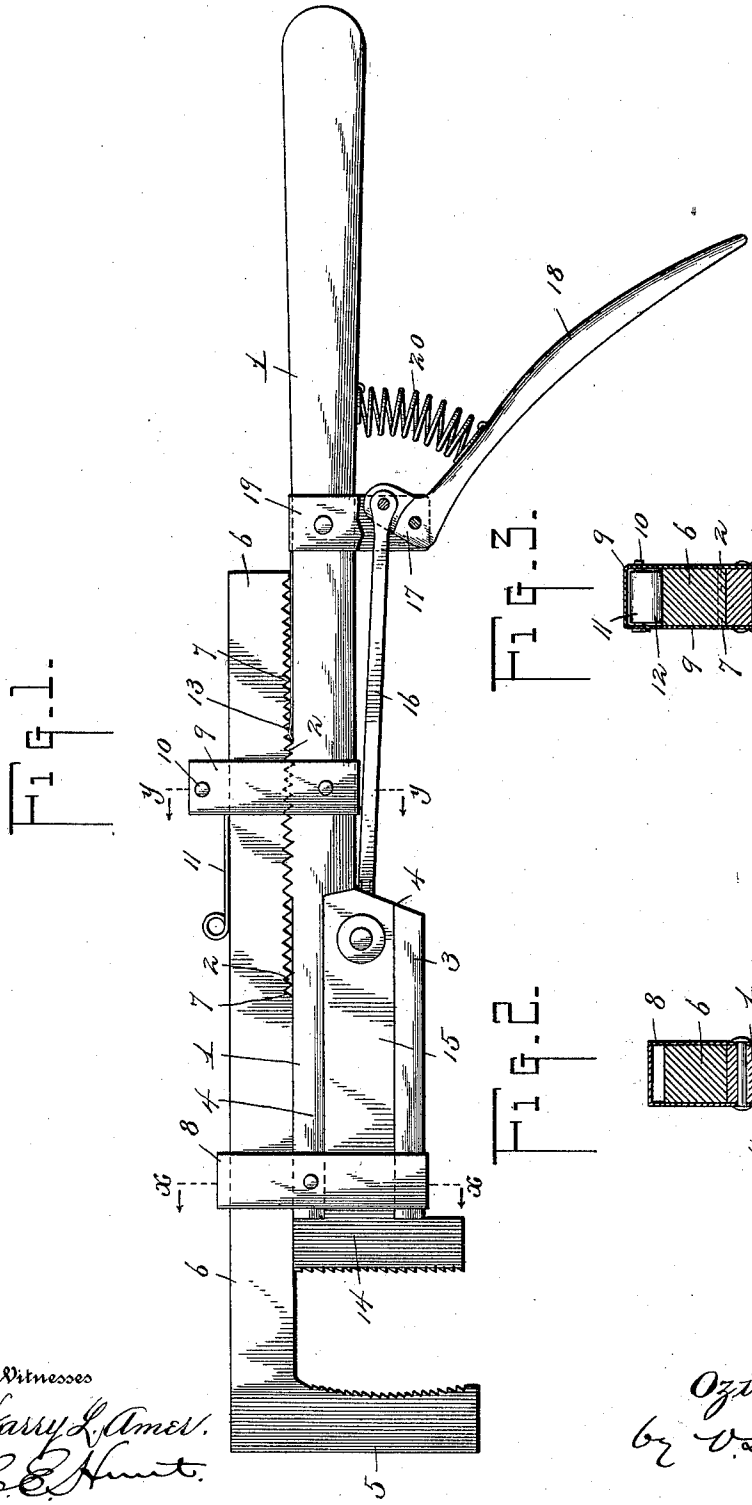


FIG. 1.

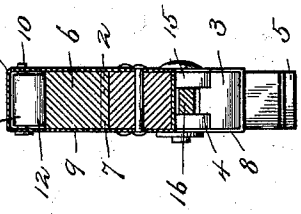


FIG. 3.

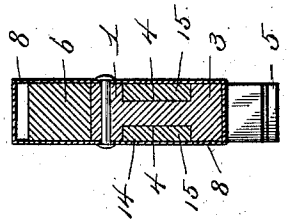


FIG. 2.

Witnesses
Harry L. Ames.
C. E. Hunt.

Inventor
Ozias F. Roberts.
by V. D. Stockbridge
his Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 610,831. Patented Sept. 13, 1898.

O. F. ROBERTS.

PIPE WRENCH.

(Application filed Jan. 26, 1898.)

(No Model.) 2 Sheets—Sheet 2.

FIG. 4.

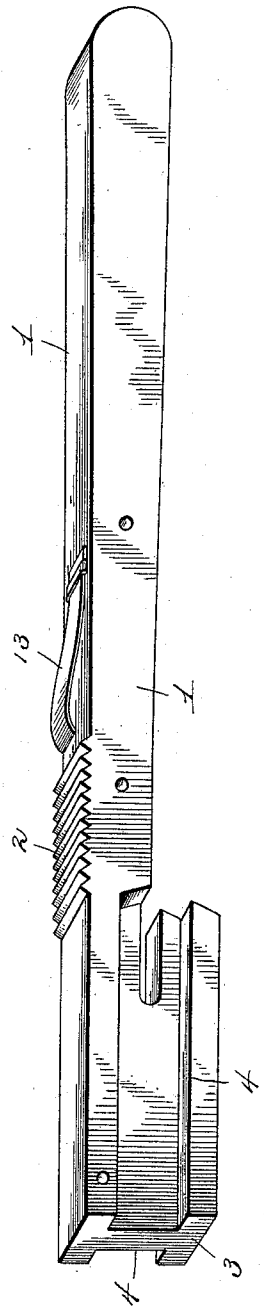


FIG. 6.

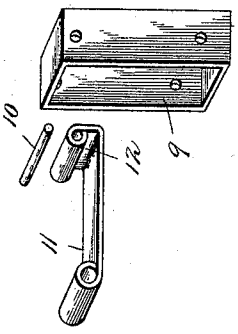
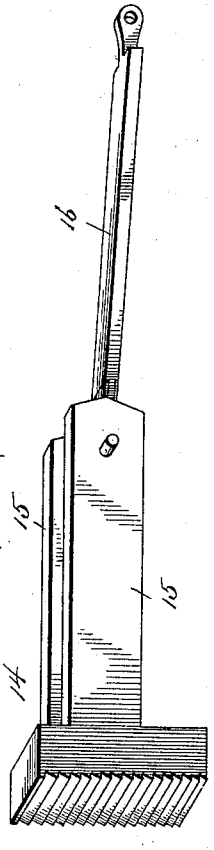


FIG. 5.



Witnesses
Harry L. Amer.
C. E. Smith.

Inventor
Ozias F. Roberts.
By O. S. Stockbridge
his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OZIAS F. ROBERTS, OF JACKSONVILLE, FLORIDA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 610,831, dated September 13, 1898.

Application filed January 26, 1898. Serial No. 668,055. (No model.)

To all whom it may concern:

Be it known that I, OZIAS F. ROBERTS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, 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.

My invention relates to pipe-wrenches, the object of the same being to provide a simple and cheaply-constructed wrench of this character in which relative adjustment of the two jaws may be readily effected and in which after adjustment said jaws may be forced into closer relation one with the other for the purpose of gripping the pipe or other device operated upon.

The invention consists of the construction, combination, and arrangement of parts, which will be more fully hereinafter described and claimed.

In the drawings forming a part of this specification, Figure 1 represents a side elevation of a wrench constructed according to my invention, the parts being shown in full lines in operative position and in dotted lines in inoperative position. Fig. 2 is a cross-section on the line *x x* of Fig. 1. Fig. 3 is a similar section on the line *y y*. Fig. 4 is a detail view of the shank of the wrench. Fig. 5 is a similar view of the supplemental or auxiliary jaw, and Fig. 6 is a detail perspective view of the loop and clamp for holding the stem of the main jaw in contact with the shank.

Like reference-numerals indicate like parts in the different views.

The shank 1 of the wrench is formed into a handle at its lower end and has teeth 2 2 on one side thereof. Its upper end is formed with an offset 3, having longitudinally-extending recesses 4 4 upon opposite sides thereof. The main jaw 5 has a stem 6 leading downwardly therefrom, formed with teeth 7 7 upon one edge thereof, adapted to engage the teeth 2 on the shank. The said stem is guided and held from lateral displacement on the shank 1 by means of a metallic loop 8, which embraces the offset 3 on the shank 1 and is secured thereto, as clearly shown. Also secured to the shank 1 at a point adjacent to the teeth 2 thereon is a loop 9, which projects outwardly from the stem and is formed with a laterally-extending pin 10, which connects the two sides thereof. Pivotally mounted on the pin 10 is a clamping-plate 11, preferably formed of sheet metal and having an eccentric portion 12 thereon, which is adapted to bear against the outer edge of the stem 6 for the purpose of forcing said stem inwardly into close contact with the shank 1. A leaf-spring 13 is secured to the shank 1 and bears at its free end against the inner edge of the stem 6 for the purpose of throwing the lower free end of said stem outwardly.

The supplemental or auxiliary jaw 14 is provided with parallel downwardly-extending guide fingers or stems 15 15, which fit and move within the recesses 4 4 upon opposite sides of the offset 3. Pivoted to the lower end of the guide-fingers 15 is a connecting-rod or pitman 16, which is pivoted at its lower end to a laterally-extending arm 17 upon an operating lever or handle 18, fulcrumed upon a clip or bracket 19, secured to the shank 1. The said operating lever or handle 18 is normally held in its outward position by means of a coiled spring 20.

As thus constructed it is thought that the operation of my improved wrench will be readily understood. Briefly stated, however, it is as follows: When it is desired to operate upon a pipe, the clamping-plate 11 is thrown outwardly, disengaging the shoulder 12 thereon from the outer surface of the stem 6 of the main jaw 5. The spring 15, acting upon the inner edge of said stem, throws the same outwardly and disconnects the teeth 7 on said stem from the teeth 2 on the shank 1. The main jaw 5 is then free to be moved toward or away from the auxiliary jaw 14 the proper distance to accommodate the wrench to the diameter of the pipe to be operated upon. When the proper degree of separation of these two parts has been reached, the clamping-plate 11 is thrown back into its locking position, forcing the teeth 7 on the stem 6 into engagement with the teeth 2 on the shank 1. Relative longitudinal movement of the main jaw 5 and shank 1 is thereby effectually prevented. The wrench is then applied upon the pipe with the same fitting between the

engaging surfaces of the main and auxiliary jaws. The operating-lever 18 is then depressed against the action of the spring 20, which, through the laterally-extending arm 17 thereon and the pitman 16, connecting said arm with the guide-fingers 15, forces the auxiliary jaw 14 upwardly into closer relation to the main jaw 5, thereby obtaining a tighter grip upon the pipe operated upon. Subsequent grips upon the pipe at different points may be obtained by alternately releasing the operating-lever 18, which through the spring 20 separates the jaws 5 and 14, and compressing said operating-lever.

Having thus described the invention, what is claimed as new is—

1. In a wrench, the combination with the shank, of a main jaw longitudinally movable with relation thereto, a longitudinally-movable auxiliary jaw, and an operating-lever on said shank for moving said auxiliary jaw toward the main jaw and for returning it to its normal position.

2. In a wrench, the combination with the shank having longitudinally-extending grooves or recesses in its upper end, of a main jaw longitudinally movable with relation thereto, an auxiliary jaw having guide-fingers fitting and movable in said grooves or recesses, an operating-lever on said shank, and a pitman connecting said operating-lever and said auxiliary jaw, as and for the purpose set forth.

3. In a wrench, the combination with the shank having an offset at its upper end provided with longitudinally-extending grooves or recesses upon opposite sides thereof, of a main jaw longitudinally adjustable with relation to said shank, an auxiliary jaw having downwardly-extending parallel guide fingers or stems fitting and movable within said grooves or recesses, an operating-lever fulcrumed in a bracket on said shank and having a laterally-extending arm, a pitman connecting the arm on said lever with the guide-fingers on said auxiliary jaw, and a spring for urging said operating-lever outwardly, as and for the purpose set forth.

4. In a wrench, the combination with the shank having teeth along one edge thereof, of a main jaw having a stem provided with teeth along one edge adapted to engage the teeth on said shank, a guide-loop secured to said shank and embracing said stem, a spring engaging said stem for urging its free end outwardly, and a clamp for holding said stem inwardly against the pressure of said spring, as and for the purpose set forth.

5. In a wrench, the combination with the shank having on one edge thereof a longitudinally-movable auxiliary jaw, and means for operating the auxiliary jaw, of a main jaw having a stem extending downwardly therefrom and provided with teeth adapted to engage the teeth on said shank, guide-loops secured to said shank and embracing said stem, a leaf-spring secured to said shank, whose free end engages the inner surface of said stem, and tends to urge the same outwardly, and a clamp pivotally mounted in the lower of said guide-loops having an offset or shoulder formed thereon adapted to bear against the outer surface of said stem for forcing and holding the same inwardly, as and for the purpose set forth.

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

OZIAS F. ROBERTS.

Witnesses:
THOMAS ELLIS WOOD,
J. HALTMAN.