(No Model.)

C. HALL.

PIPE WRENCH.

No. 516,485. Patented Mar. 13, 1894.

Fig. 2.

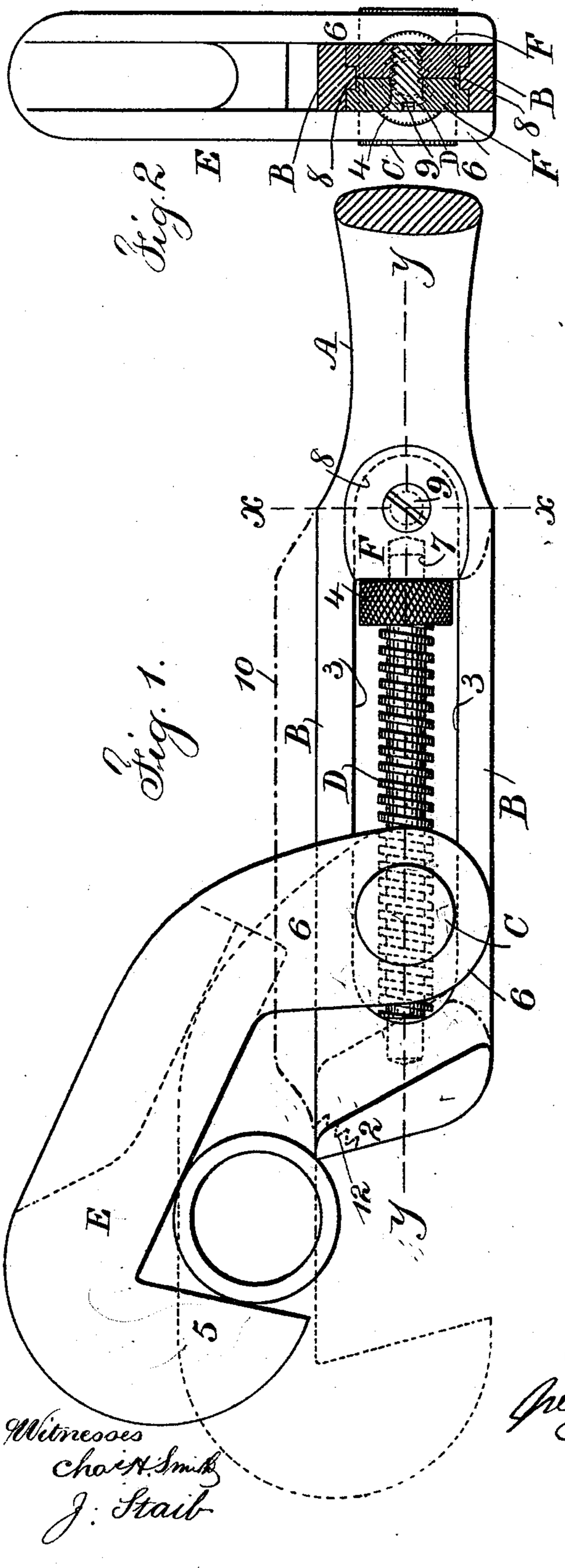
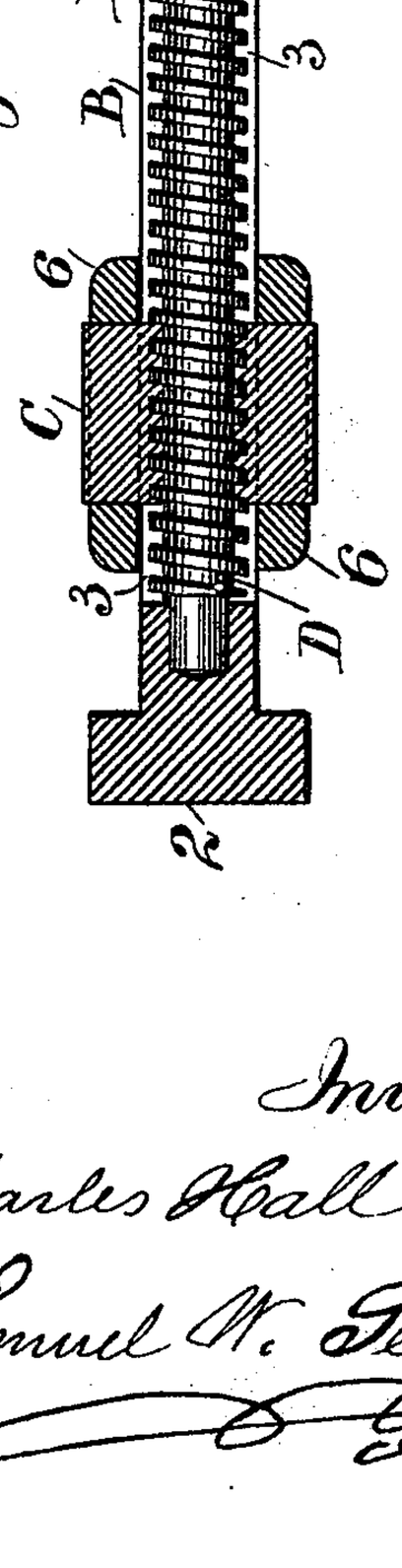


Fig. 1.

Fig. 3.



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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 516,485, dated March 13, 1894.

Application filed November 13, 1893. Serial No. 490,737. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HALL, a citizen of the United States, residing in the city and State of New York, have invented an Improvement in Pipe-Wrenches, of which the following is a specification.

Wrenches have heretofore been made in which the pipe or rod has been received into a hook and held by a chisel-shaped jaw connected with the handle and pressed against the pipe, and a screw has been made use of for adjusting the position of the hook in relation with the chisel-shaped jaw, but difficulty has been experienced in constructing the parts so as to obtain a screw of the proper size for giving the necessary strength and for taking such a bearing upon the pivot of the swinging jaw as to prevent one part embedding itself into the other part.

By my improvement I am enabled to permanently connect the swinging hook-shaped jaw to the handle bar and screw and to adjust the pivot of the swinging jaw in a reliable manner, the pivot of the swinging jaw forming the nut for the adjusting screw, and the parts are constructed in such a manner that the screw can be taken out when necessary, and in assembling the parts together, opportunity is given for the insertion of the screw and for securing the same in a longitudinal mortise in the handle bar.

In the drawings, Figure 1 is a side view of the wrench with the handle portion broken off. Fig. 2 is a cross section at the line *x x*. Fig. 3 is a section longitudinally at the line *y y*.

Any suitable handle is made use of, and one end of the same is represented at A, and the handle may either be separate from or formed with the handle bar B, the forward end of which handle bar forms a chisel-shaped end or jaw 2, and the handle bar is slotted, having a longitudinal mortise 3 which mortise is of a size adapted to receiving through it the pivot pin C which also forms a nut for the screw D which is within the longitudinal mortise 3, and it is provided with a thumb wheel or burr by means of which the screw can be rotated.

The swinging jaw E is provided with a hook 5 at the end, and the strap portions 6 extend at each side of the handle bar B and are formed with eyes through which the pivot pin C passes, and it is advantageous to make this pivot pin cylindrical and of the same size as the width of the longitudinal mortise and also of the same diameter as the eyes in the strap portions 6 of the swinging jaw, hence in assembling the parts the strap portions 6 of the swinging jaw are passed at each side of the handle bar B and the pivot pin C is passed through the eyes of the strap portions 6 and through the longitudinal mortise 3 in the handle bar, and the screw D is then screwed into the nut portion of the pivot pin C and passed into its place within the longitudinal mortise 3, but it will be apparent that the screw D must be brought into line with the screw-threaded hole in the pivot pin C through which such screw D passes before the end of the screw can be entered into this portion of the pivot pin, and with this object in view the mortise 3 is made long enough for the pivot pin C to be at one end thereof and for the screw D to be passed into the mortise and in line with the screw-threaded hole in the pivot pin, hence the screw can be screwed into the pivot pin and its circular end passed into a hole in the handle bar at the outer end of the longitudinal mortise 3 and the journal of the screw D at the back end must then be supported by a suitable bearing block. With this object in view the bearing block F is made in two parts and it is adapted to fit the back end of the longitudinal mortise 3 and it has a recess for the reception of the journal 7 of the screw D; and it is advantageous to make use of ribs 8 around the longitudinal mortise 3 at the back end, the edges of the bearing block F being rabbeted to set against these ribs 8, so that when the two parts of the bearing block F are set together from opposite sides, a screw 9 passed through these bearing blocks and holding them together will also clamp such bearing blocks firmly in place at the end of the longitudinal mortise, and the screw D will be held in its position longitudinally and it is free to be rotated between the thumb and finger when acting upon the burr or wheel 4 so as to move the pivot pin C longitudinally of the mortise 3 and vary the distance between the chisel end 4 of the handle bar and the interior surface of the hook 5 and there-

by adjust the pipe wrench so as to act against a pipe or rod of any desired size.

It will now be understood that in using this pipe wrench the screw D is rotated to adjust the pivot pin C and swinging jaw E so that the hook 5 thereof will receive the pipe or rod with the chisel end or jaw 2 bearing upon the pipe in such a manner as to effectually rotate the same under the action of the handle bar and handle, and the parts should be adjusted in such a manner that the chisel end 2 will not indent the pipe more than is necessary to form a burr for the chisel to act against in rotating the pipe and for preventing the wrench slipping upon such pipe or rod.

I do not limit myself to the use of a handle bar with a longitudinal mortise, as the operation of the parts would be the same if the handle bar were removed at one side of the mortise and the opposite side made sufficiently thick to obtain the necessary strength, as indicated by dotted lines at 10, Fig. 2, but I prefer to arrange the parts in the manner before described.

The hook at the end of the swinging jaw is made at an acute angle to the body of the jaw so that a pipe or rod will be crowded into the angle by the pressure of the other jaw and bear against the two surfaces and will be less liable to slip than a pipe within a hook that has a rounding interior surface and hence only one line of bearing against the pipe.

I do not limit myself to a single chisel shaped edge to the jaw 2 at the end of the handle bar, as there may be several chisel shaped corrugations as indicated by the dotted lines at 12.

The end of the handle bar being at an acute angle, corresponding to that of the hook allows of this wrench being used with nuts and bolt heads, introduced between the two parallel surfaces.

It will be apparent by reference to Fig. 1, that the hook is swung up against the side of the handle bar jaw as shown by dotted lines when the wrench is to be used on nuts or bolt heads.

I claim as my invention—

1. The combination with the handle and handle bar having a chisel-shaped end or jaw, of a swinging jaw having a hook-shaped end, a pivot pin passing through the eyes of the swinging jaw and having a screw-threaded hole forming a nut, an adjusting screw passing through such pivot pin, and bearings for the end of the screw within the handle bar, substantially as set forth.

2. The combination with the swinging jaw having a hook at one end and straps with eyes at the other end, of a mortised handle bar passing through between the straps, a pivot pin passing through the eyes of the swinging jaw and screw-threaded to form a nut, a screw having a thumb wheel received into the mortise of the handle bar and passing through the pivot pin, and a bearing block introduced into the mortise at one end thereof and having a socket for the journal of the screw, substantially as set forth.

3. The combination with the swinging jaw having a hook at one end and straps with eyes at the other end, of a mortised handle bar passing through between the straps, a pivot pin passing through the eyes of the swinging jaw and screw-threaded to form a nut, a screw having a thumb wheel received into the mortise of the handle bar and passing through the pivot pin, and a bearing block made in two parts introduced into the mortise at one end thereof and having a socket for the journal of the screw, and a screw for connecting the two parts of the block, substantially as set forth.

4. The combination in a pipe wrench, of a handle bar having a chisel-shaped end, a swinging jaw having a hook at one end and eyes at the other end, a pivot pin for such eyes, and forming a nut a screw running longitudinally of the handle bar and passing through the pivot pin to adjust the swinging jaw, and bearings for the adjusting screw, substantially as set forth.

5. The combination in a wrench with the handle bar having a jaw at the end, of a swinging jaw having an acute angle hook, pivots for the swinging jaw and a nut connected to or formed with such pivots and a screw running longitudinally of the handle bar and acting upon such nut, substantially as set forth.

6. The combination in a wrench with the handle bar slotted longitudinally and having a jaw at the end, of a swinging jaw having an acute angle hook, pivots for the swinging jaw and a nut in the slot formed with such pivots and a screw running longitudinally of the handle bar and supported in bearings at the end of the slot and acting upon such nut, substantially as set forth.

7. The combination in a wrench, with the handle bar having a flat end and chisel edge forming a jaw, of a swinging hook-shaped jaw having a flat interior surface parallel to the handle bar jaw when the hook is stopped by the handle bar, a pivot for the swinging jaw, and a screw for acting upon the pivot to adjust the jaw, substantially as specified.

Signed by me this 9th day of November, 1893.

CHAS. HALL.

Witnesses:
HAROLD SERRELL,
WILLIAM G. MOTT.