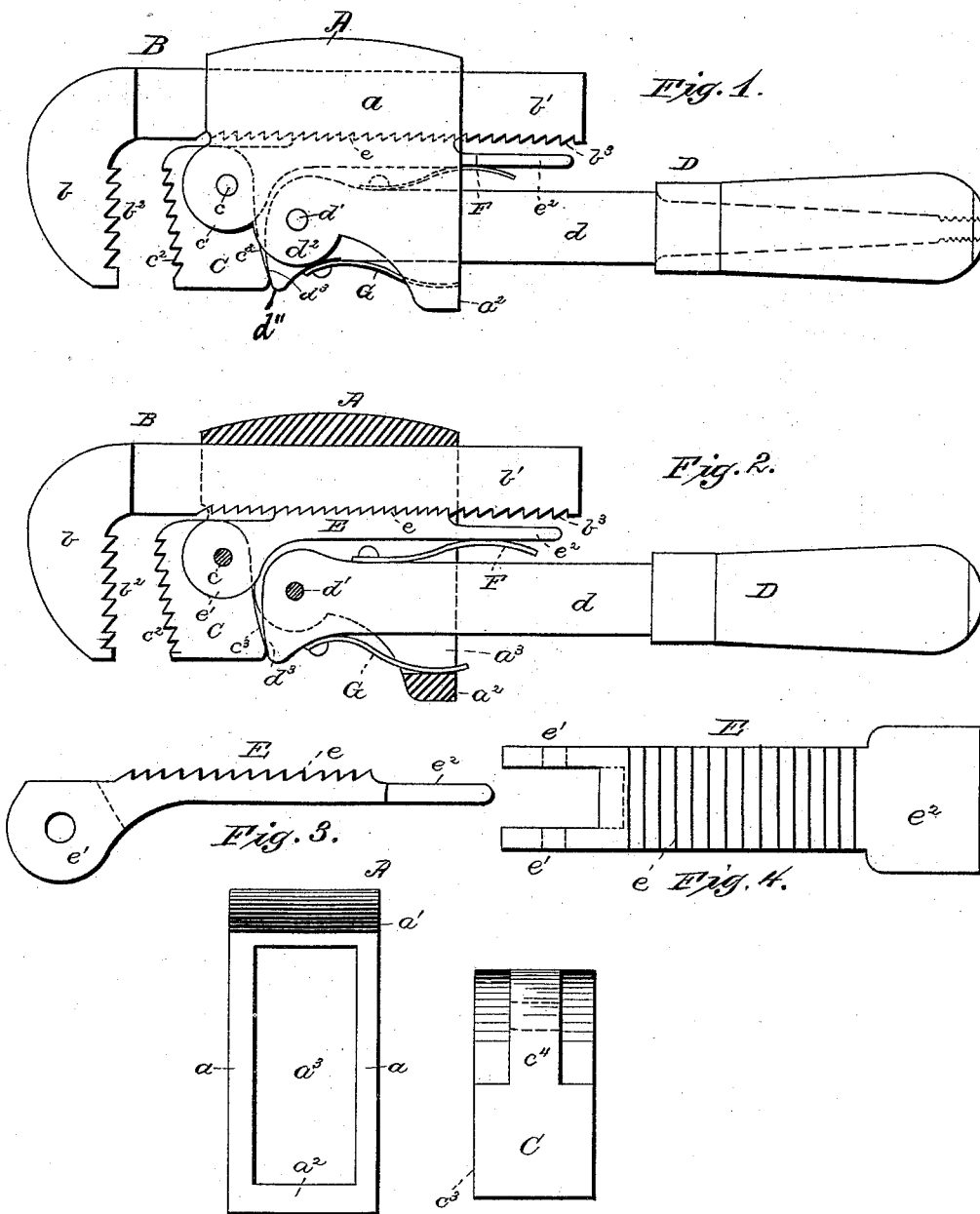


(No Model.)

D. J. HERSEY.
PIPE WRENCH.

No. 419,854.

Patented Jan. 21, 1890.



Witnesses
W. B. Harris
L. W. Balloch

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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TO HENRY B. SPITZ, OF BOSTON, MASSACHUSETTS.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 419,854, dated January 21, 1890.

Application filed August 23, 1889. Serial No. 321,751. (No model.)

To all whom it may concern:

Be it known that I, DON J. HERSEY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, 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.

The invention has relation to pipe-wrenches, and has for its objects, first, to produce a pipe-wrench in which the sliding jaw may be readily and quickly operated to release the pipe when the latter has been turned sufficiently, and thus avoid any binding of said jaw upon the pipe, as is the case with the most approved wrenches now in use; secondly, to produce a wrench of this class in which there shall be combined a sliding jaw, a pivoted jaw, and an operating-handle, the latter being so arranged that when the pipe is clamped and the wrench turned said operating-handle will force the pivoted jaw toward the head of the sliding jaw, and thereby more firmly grip the pipe; thirdly, to so arrange the teeth on the sliding jaw and the pivoted jaw with relation to each other that there will be no liability of the slipping of the pipe when the latter is turned; fourthly, to produce a pipe-wrench, which is extremely simple in construction, has but few parts, and which can be very strongly yet lightly made; and with the above-cited objects in view my invention consists in the combinations of parts, as hereinafter described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of my improved wrench; Fig. 2, a similar view partly in section; Fig. 3, a detail side view of the locking-lever; Fig. 4, a plan view of same; Fig. 5, an end view of the housing; Fig. 6, an end view of the pivoted jaw C.

Referring to the drawings, A indicates the body or housing of the wrench, which, as shown, has the side walls a and the upper wall a' , and the lower lip or ledge a^2 , forming the rectangular opening a^3 , in which are

adapted to fit and operate the remaining parts of the wrench, presently described.

B indicates the sliding jaw, which is provided with the head b , and the shank b' , which latter is adapted to pass through and slide in the opening of the housing A. The head b is provided on its inner vertical face with upwardly-inclined teeth b^2 . The shank b' of the sliding jaw B is also provided upon its lower face for nearly its entire length with teeth b^3 , with which is adapted to engage the teeth of the locking-lever, presently described.

C indicates a second jaw, which is pivoted upon a pin c , passing through the ears c' of the side walls of the housing. Said jaw is provided on its face adjacent to the head b' of the sliding jaw B with downwardly-inclined teeth c^2 , and said jaw is provided with the rear curved bearing-edge c^3 , for a purpose hereinafter explained, and said jaw is also cut away or rabbeted to form a tongue c^4 .

By the relative arrangement of the teeth on the sliding and pivoted jaws I have found in practice that the pipe may be very firmly gripped and any tendency of the latter to slip avoided.

D is the operating-handle of the wrench, the shank d of which passes through the opening in the housing and is pivoted upon a pin d' , which passes through ears d^2 of the side walls of the housing A, and provided at its inner end with a nose d'' . The rear face d^3 of the shank d is curved, as shown, to correspond with the like face of the jaw C, before described, and which in the normal position of said handle lies adjacent to said curved face.

Inasmuch as the handle D and jaw C are pivoted, a downward movement of said handle will therefore cause the face d^3 thereof to bear upon the face c^3 of the jaw C, forcing the latter in a direction toward the head of the sliding jaw, and thereby more firmly grip the pipe. It will be seen that the greater the force exerted on the handle the more firmly will the pipe be gripped.

The ledge a^2 of the housing serves as a stop to prevent the handle D from being depressed too far, which might tend to crush the pipe.

For holding the sliding jaw in position when the pipe is being turned I employ a locking-

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lever E, which consists of a shank *e*, toothed upon its upper face and provided at its rear end with perforated lugs *e'*, through which passes the pin *c*, and said lugs *e'* when the locking-lever is in position embracing the tongue *c'* of the pivoted jaw C.

Although I have shown the locking-lever pivoted upon the pin *c*, it is evident that the same could be pivoted upon the pin *d'*, the rear end of the shank *d* of the handle D being cut away or rabbeted in the manner similar to the jaw C to allow of this.

For holding the teeth of the locking-lever in engagement with the teeth on the shank *b'* of the sliding jaw B, I provide a leaf-spring F, which is secured at one end to the shank *d* of handle D, and which bears at its free end upon the under face of the shank *e* of the locking-lever for readily operating the latter when it is desired to adjust the sliding jaw. To accommodate a large-sized pipe, I provide said locking-lever with a thumb-piece *e''*, which projects beyond the front face of the housing, as shown in Figs. 1 and 2.

For accommodating smaller-sized pipes it will be seen that it is not necessary to operate the locking-lever by hand, the sliding jaw being merely slid back the desired distance, the teeth thereof sliding over the teeth of the locking-lever.

For holding the operating-handle in the normal position (shown in Figs. 1 and 2) I employ a leaf-spring G, secured at one end to the under face of the shank *d* and bearing at its free end upon the ledge *a''* of the housing.

The operation of my improved pipe-wrench may be briefly described as follows: The wrench having been placed around the pipe to be turned, the sliding jaw B is adjusted until the teeth thereof engage said pipe. The wrench is then turned by means of the handle D, whereby the teeth on the jaw C, in conjunction with the teeth *b''* on jaw B, are made to more firmly grip the pipe and cause the latter to be turned without slipping. When

the pipe has been turned sufficiently, the locking-lever is depressed by means of the thumb-piece, thus releasing the sliding jaw, when the wrench can be moved from the pipe, or this may be accomplished by simply lifting the operating-handle to allow the jaw C to release the pipe.

Having now described my invention, what I claim is—

1. The combination, in a pipe-wrench, of the housing provided with perforated ears *c'* *d''*; the toothed jaw C, having a curved rear face *c''*, and a tongue *c'*, pivoted between the perforated lugs *e'* on the spring-actuated locking-lever E, provided on its upper face intermediate of its ends with ratchet-teeth *e*, engaging with ratchet-teeth *b''* on the lower face of the sliding jaw B, and a spring-controlled handle D, provided at its inner end with a curved face *d''* and a nose *d'''*, which force the jaw C inward upon a downward pressure of the handle, substantially as specified.

2. The combination, in a pipe-wrench, of the housing A, provided with a rectangular opening *a''*, the sliding jaw B, provided on its lower edge with ratchet-teeth *b''*, the locking-lever E, fulcrumed between the walls of the housing and provided on its upper edge with ratchet-teeth engaging the ratchet-teeth *b''* of the sliding jaw B, and held in engagement therewith by the spring F, the toothed jaw C, provided with a tongue *c'*, fulcrumed between the ears *e'* of the locking-lever E, the handle pivoted between the lugs *d''* of the housing, and the spring G, secured to the under face of the handle and bearing against the stop *a''*, formed integral with the housing, substantially as specified.

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

DON J. HERSEY.

Witnesses:

S. S. LAPHAM,

JOHN W. HOGAN.