

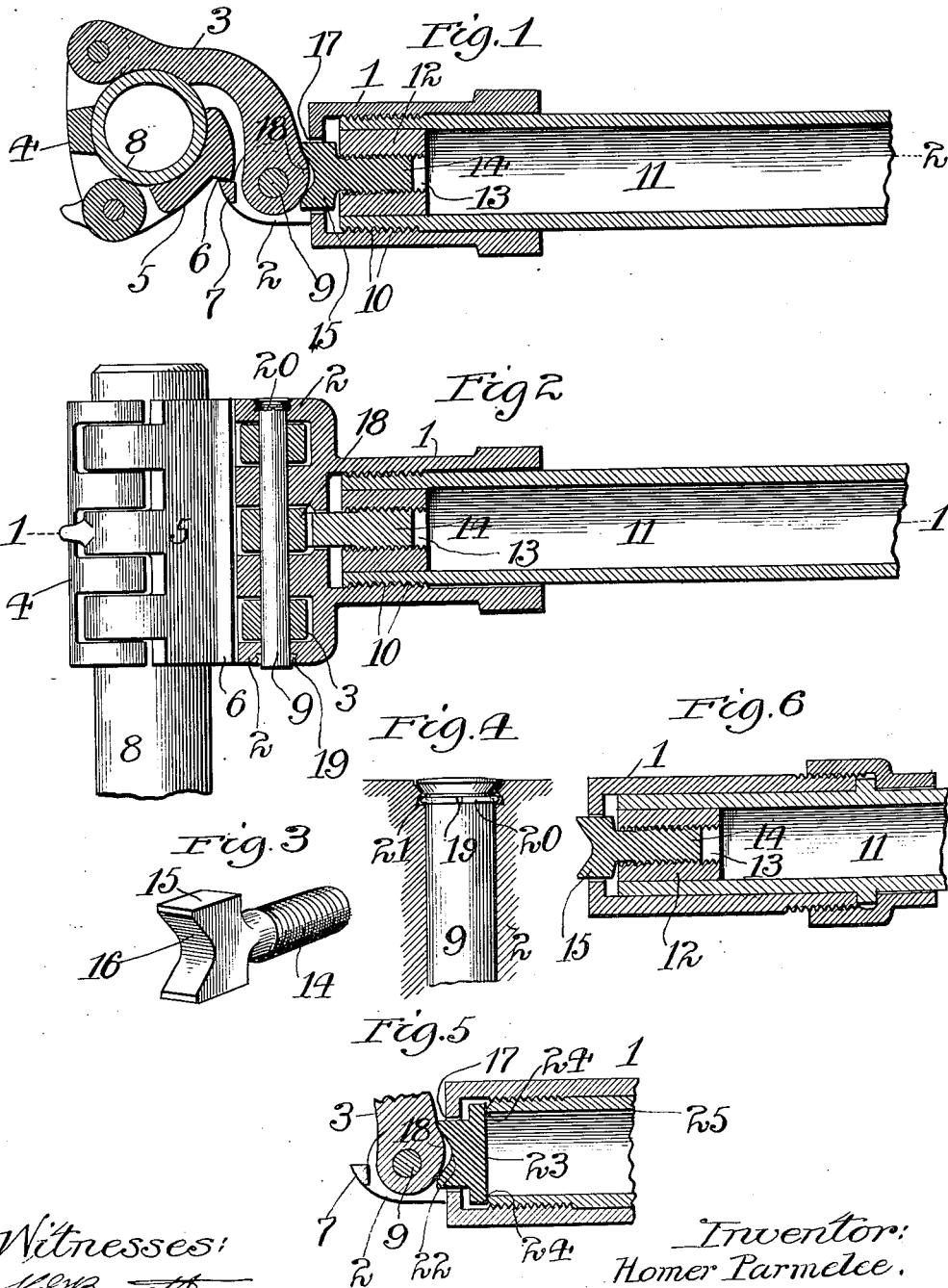
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Patented May 1, 1900.

H. PARMELEE.  
PIPE WRENCH.

(Application filed Dec. 26, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 648,706, dated May 1, 1900.

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*To all whom it may concern:*

Be it known that I, HOMER PARMELEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification:

My invention relates to pipe-wrenches generally, but more particularly to that class in which the girth is made in sections, the ends of which engage the fulcrum-piece; and its object is to provide simple, efficient, and reliable means for locking the girth to such fulcrum-piece—that is, to prevent the disengagement of the parts during the manipulation of the wrench. As shown, these means are controlled by the turning of the wrench-handle, whereby the operator is enabled to actuate the lock with facility in the work of operating the wrench. I also provide a novel removable pin for holding and pivoting the girth to the fulcrum-piece, so that different sizes of girth may be readily substituted and used with the same fulcrum-piece.

My invention embodies other novel and advantageous features of construction and operation, which will be apparent from the description hereinafter given.

In the accompanying drawings, Figure 1 is a sectional plan of my wrench, taken on line 1 of Fig. 2; Fig. 2, an elevation of my wrench, but with the fulcrum-piece and handle in section, such section being on the line 2 of Fig. 1; Fig. 3, an enlarged perspective of the locking-bolt; Fig. 4, an enlarged elevation of one end of the pivoting-pin; Fig. 5, a section showing a modified form of construction of the locking means proper, and Fig. 6 a sectional view showing a modified form of the handle for operating the locking-bolt.

The fulcrum-piece 1 is preferably provided with a series of bearing-lugs 2, on which is to be pivoted or hinged the girth, formed, as shown, of the base-section 3, middle section 4, and lip-section 5, all the sections being suitably hinged together. The last or lip section has a lip 6 on its outer face adapted to engage a shoulder 7 on the fulcrum-piece, so that the pressure from the handle and through the fulcrum-piece will be exerted on the girth, so as to tightly clamp a pipe, such as the pipe

8 illustrated in the drawings. The base-section is pivoted or hinged to the fulcrum-piece by means of a pin 9 of the peculiar construction hereinafter referred to.

As illustrated in Figs. 1 and 2, the fulcrum-piece, which is hollow, is provided for a suitable distance with right-hand internal screw-threads 10 to receive corresponding screw-threads on a handle 11, preferably in the form of a pipe, as shown. The handle is thereby permitted to move inward and outward with respect to the fulcrum-piece or head, which is preferably extended, as shown in the drawings, sufficiently beyond the screw-threads of the handle and along its smooth surface to form a suitable bearing therefor. The inner end of the handle has a plug 12, provided with a central screw-threaded bore 13, which receives the left-hand screw-threaded shank 14 of the bolt, which forms the means for locking the girth and which is actuated by the rotation of the handle. This bolt has a preferably flat-sided head 15, whose end or top may be hollowed out, as at 16, or made substantially U or V shaped. This bolt or abutment is adapted to work or reciprocate through a corresponding opening 17 in the outer end of the fulcrum-piece and to abut or contact the middle bearing lug or extension 18 on the inner end of the base-section 3 of the girth.

It is obvious that in a wrench unprovided with the lock after the pipe is clamped and the lip has engaged there is a possibility of disengagement of the lip when the operator is securing a fresh hold or grip on the pipe; but when such lock is used it will be readily perceived that all danger of disengagement is removed and a positive engagement afforded, which is entirely under the control of the operator through his handle, so that in swinging his handle to turn the pipe he can simultaneously partially rotate the handle to make the lock sufficiently tight, and also he can, if desired, unlock the girth by rotating the handle in the opposite direction. The result of rotating the handle slightly is to cause the head 15, which is of course held from rotation, to move against the girth-section 3, which is thereby held in fixed relation to the fulcrum. So long as this fixed relation is maintained the other girth-sections cannot

move to allow disengagement of the lip 6 and shoulder 7, whereby the girth becomes securely locked around the pipe. By reason of the construction shown the operator can swing his handle for fresh holds on the pipe without liability of freeing the girth from the pipe, as might otherwise happen, and he is also enabled to simultaneously lock or unlock the girth.

The pintle or pivoting-pin 9 passes through registering holes in the fulcrum-piece and also in the series of lugs on the girth-section 3, and, as shown more clearly in Fig. 4, one end or the head of the pin is beveled, being preferably so, and the hole in the fulcrum-piece is correspondingly countersunk to receive the head of the pin, so that it will be flush or substantially so with the top face of the fulcrum-piece. The pin is provided near its beveled end with a circumferential groove 19 to receive a spring-ring 20, normally projecting slightly beyond the cylindrical surface of the pin and adapted to be sprung into and be engaged by a circular preferably substantially V-shaped groove 21 in the wall of the hole in the fulcrum-piece near either or both ends. For its purposes as a pivotal pin it is practically irremovable and can only be removed by striking or forcing the lower end of the pin inward, whereupon the ring will be pressed within its groove to permit the unlocking and removal of the pin.

In Fig. 5 is shown a modified form of construction of the locking means proper, which is similar to the bolt shown in Figs. 1 and 2, in so far as its extreme outer end 22 is concerned; but it is unprovided with a shank, having in place thereof a flat enlarged end of head 23, against which bears the edges 24 of the inner end of a preferably open pipe 25, forming the operating-handle. In this form the lock is separate and loose both from the fulcrum-piece and the operating-handle, whereas in the form shown in Figs. 1 and 2 the lock was engaged by the operating-handle. In this modified form shown in Fig. 5 the lock is dropped in place within the fulcrum-piece 1, when the handle is unscrewed and detached and its outer end 22 passes through the opening 17, adjacent to the girth-section 3, near its pivotal point. When the handle is screwed inward sufficiently, its end will bear directly against the lock and force it against the part 18 of the girth-section 3, effecting the same result as in the case of the form already described.

Fig. 6 represents a modified form of construction of the fulcrum-piece and handle, in which the handle is suitably held within the fulcrum-piece and against longitudinal movement, but not against rotary movement. In the forms already described the handle which controlled the lock had both a rotary and longitudinal movement with respect to the fulcrum-piece; but in the form now referred to the handle has only the rotary movement. This modified form of wrench is otherwise

the same in construction and operation as the wrench already described. In all of the forms the same result is obtained—that is, the movement of the lock against the girth-section—thereby preventing the disengagement of the lip and shoulder, so that in taking fresh holds of the pipe there is no danger of inadvertently freeing the wrench from the pipe.

Although I have described more or less precise forms and details of construction, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents, as circumstances may suggest or render expedient and without departing from the spirit of my invention.

I claim—

1. A pipe-wrench comprising a clamping member to grip the pipe, a handle connected to such member, and means for locking said member around the pipe with varying degrees of tightness and controlled by the handle, to prevent the disengagement of such member from the pipe but not affecting the grip on the pipe.

2. In a pipe-wrench having a girth and a fulcrum-piece on which the girth is hinged, a locking member operating within such fulcrum-piece and adapted to lock the girth around a pipe, and an operating-handle for actuating such member.

3. In a pipe-wrench having a girth and a fulcrum-piece on which the girth is hinged, a locking member operating within such fulcrum-piece and adapted to lock the girth around a pipe and an operating-handle connected to the fulcrum-piece and adapted to be swung to operate the wrench and to be rotated to operate such locking member.

4. A pipe-wrench comprising a clamping member to grip the pipe, a handle operatively connected to such member and means for locking the member around the pipe to prevent its disengagement therefrom but not affecting the grip on the pipe, such means being controlled by said handle.

5. In a pipe-wrench having a rotatable operating-handle, means for locking the wrench in position around the pipe and preventing the freeing thereof from the pipe during the manipulation of the wrench but exerting no influence on the grip on the pipe, which means are controlled by the rotation of the operating-handle.

6. In a pipe-wrench having a girth in sections and a hollow fulcrum-piece on which the girth is hinged, an operating-handle rotatable within said piece, a locking-bolt within the fulcrum-piece and adapted to be projected therethrough and against one of the girth-sections hinged to such piece and an operating-handle rotatable within the fulcrum-piece and adapted to cause the bolt to press against such girth-sections.

7. In a pipe-wrench having a girth comprising a base-section, middle section and lip-section, hinged together and encompassing

the pipe, a fulcrum-piece on which the base-section is hinged and having a shoulder engaged by such lip-section, an operating-handle, and means controlled by such handle for preventing disengagement of the lip-section and shoulder.

8 In a pipe-wrench having a girth in sections and a hollow fulcrum-piece on which the girth is pivoted or hinged, a locking-bolt within such fulcrum-piece and having a screw-threaded shank and a head projecting through an opening of the fulcrum-piece adjacent to the pivotal point of the girth, and an operating-handle rotatable in such fulcrum-piece and having in one end a screw-threaded bore receiving such shank.

9. A pipe-wrench comprising a girth in sections, a hollow fulcrum-piece on which the girth is hinged and on which the free end of the girth engages, and means for preserving such engagement consisting of a bolt having a shank 14 and a head 15 projecting from within the fulcrum-piece, an operating-handle rotatable in such fulcrum-piece and having a screw-threaded bore receiving said shank whereby the rotation of the handle will force the bolt outward against the girth and prevent disengaging movement of the parts.

10. A pipe-wrench comprising a girth in sections, a hollow fulcrum-piece on which the girth is hinged and on which the free end of the girth engages, such fulcrum-piece having right-hand internal screw-threads, and means for preserving such engagement consisting of a bolt having a shank 14 with left-hand screw-threads and a head 15 hollowed out at 16, and an operating-handle having external screw-threads engaging said internal threads and having a central screw-threaded bore receiving said shank, whereby as the handle is inwardly screwed the bolt will be projected outwardly against the girth and prevent disengagement.

11. In a pipe-wrench having a girth and a fulcrum-piece, a pivot-pin or pintle on which the girth is hinged or pivoted and passing through the girth and fulcrum-piece, and spring-catch means on the pin for normally locking the pin in position.

12. In a pipe-wrench having a girth and a

fulcrum-piece, a pivot-pin or pintle on which the girth is hinged or pivoted and passing through a hole in the girth and fulcrum-piece, such pin having a circumferential groove, and a spring-ring in such groove, said hole also having a groove, in which such ring engages to hold the pin against displacement in ordinary use.

13. In a pipe-wrench having a girth and a fulcrum-piece, a pivot-pin or pintle passing through a hole in the girth and fulcrum-piece, such pin having a circumferential groove near one end, and a spring-ring in such groove, said hole having an angular groove in which the ring engages.

14. A pipe-wrench comprising a hollow fulcrum-piece 1, having bearing-lugs 2, a girth consisting of a base-section 3 hinged to the lugs, a middle section, and an end section having a lip 6, a shoulder 7 on the fulcrum-piece engaged by the lip, such fulcrum-piece having internal screw-threads 10 and an opening 17, a hollow handle 11 having right-hand threads engaging threads 10, a plug 12 in the end of the handle and having a screw-threaded bore 13, and a bolt consisting of a shank having a left-hand thread, and of a head 15 adapted to be forced through the opening 17 against the girth-section 3, such shank being received by said bore.

15. In a pipe-wrench, a handle for such wrench, which handle is rotatable with respect to the wrench, in combination with means controlled by the rotation of the handle to lock the wrench around the pipe but exerting no influence on the grip on the pipe.

16. A pipe-wrench comprising a clamping member encompassing and gripping the pipe and locking itself thereto in a forward movement, a handle to which such member is operatively connected, and means controlled by the handle for preventing disengagement of the clamping member from its encompassing position on the backward movement of the handle.

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