



Witnesses.
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UNITED STATES PATENT OFFICE.

CLINTON W. STOVER, OF CANTON, OHIO.

PIPE-WRENCH.

999,272.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed March 27, 1911. Serial No. 617,030.

To all whom it may concern:

Be it known that I, CLINTON WILLIAM STOVER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a certain new and useful Improvement in Pipe-Wrenches, of which the following is a full, clear, and exact description.

This invention comprehends certain improvements in the kind of wrenches, typified in the Potts Patent No. 249,394, the Bonner Patent No. 737,199, and others, which include a shank having rack teeth along one edge and a jaw fixed to one end, and a pawl-carrying yoke which is movable along said shank and is also movable transversely of the shank to cause the engagement or disengagement of the pawl and rack,—the movable jaw being a part of said pawl.

The object of the invention is to reduce the cost, and to increase the durability of wrenches of this sort.

The invention resides partly in the novel construction of the yoke and jaw-carrying pawl, whereby they may be assembled and maintained in operative relations with each other and with the wrench shank without using pivoted pins, rivets, or guide pins, such as have been commonly used heretofore for such purpose.

In the drawing, Figure 1 is a side elevation of a wrench embodying the invention with the near side of the yoke cut away to show the inclosed pawl. Fig. 2 is a side elevation of a part of the wrench shank and said yoke cut away in like manner when the yoke has been moved transversely of the shank to disengage the pawl from the shank. Fig. 3 is a side elevation of the yoke. Fig. 4 is an end view of the yoke from the right end as shown in Fig. 1. Fig. 5 is an end view from the left end as shown in Fig. 1. Fig. 6 is a plan view of the wrench from the lower side of Fig. 1.

Referring to the parts by letters, A represents the shank of the wrench, the outer end of which serves as a handle for operating the same. B represents a jaw which projects laterally from one end of said shank. Along what is the bottom edge of the shank, as shown in Fig. 1, are rack teeth a .

D represents the yoke having two straps d , d' which embrace said shank, the rear strap being constructed so as to allow the

yoke to move up and down as upon a fulcrum at or near the front edge of the transverse member of the front strap. The part of the yoke which is below the shank, as shown in Fig. 1, constitutes a housing which has two sides d^2 and a connecting member d^3 . Near the front edge of this housing is a shelf d^4 extending from one side d^2 . The pawl E occupies a position mainly within the said housing. It has near its rear end and upon that edge which is opposed to the rack teeth a the teeth e for engaging said rack teeth a . At its rear end near the opposite edge, this pawl is provided with a rearwardly extended lip e' , which projects into a space between the housing member d^3 and an inwardly turned flange d^5 . In the lower edge of this pawl is also a transverse notch e^2 , which takes over a transverse rib d^6 formed on the inner surface of the housing member d^3 . The engagement of this rib and notch prevents any endwise movement of the pawl within the housing. The projection of the lip e' into the space between the flange d^5 and the housing member d^3 prevents any material movement of the rear end of the pawl within the housing toward and from the shank independently of the yoke itself.

The front end of the pawl just in front of the housing is widened out in both directions to form a wrench jaw, the face of which is suitably serrated. The rear surface of this wrench jaw is curved in a circular arc and fits against the correspondingly curved front ends of the two side members b^2 of the yoke housing.

The spring C is an expansion coiled spring which exerts its force between the shelf d^4 and the pawl tending to swing it away from the shank. The spring F is an expansion coiled spring seated in a seat in the transverse member of the rear strap d and bearing against the smooth edge of the shank, and this spring exerts its force to so move the yoke transversely to the shank as to cause the engagement of the pawl teeth with the rack teeth on said shank. It is to be noticed that it does not matter in what position the wrench may be held, the pawl is retained in operative position within the housing, and this without the use of any pivot pins. The back thrust of the work against the face of the jaw E' is transmitted back through the pawl and its teeth to the toothed part of the shank.

The jaw B is provided with a hard metal face B', which is held on to the jaw B by the very simple and efficient construction shown. That is to say, in the face of the jaw is the transverse notch *b*. In the back edge of the jaw face is a tongue *b'* which fits said notch. In the outer surface of the jaw B and on both sides thereof there is a groove *b*². The jaw face has two side members *b*² which embrace the sides of the jaw B, and are forced down into said grooves. The engagement of the groove and rib *b*, *b'* prevents any movement of this jaw face relative to the jaw in a direction at right angles to the shank, and the engagement of the side members of the jaw face in the grooves *b*² prevent any movement of said jaw face in the direction parallel with the shank. In other words, this hardened jaw face is permanently held in the described working position without pins or rivets.

The patentable features of the above described fixed jaw forms the subject matter of another application which has been filed as a division of this application.

Having described my invention, I claim:

1. In a wrench, the combination of the jaw shank with rack teeth at one edge and a fixed jaw at one end, with a yoke which is movable lengthwise upon said shank and transversely thereof, said yoke having on that side of the shank whereon the rack teeth is formed a housing comprising two side members and a transverse connecting member, and there being an inwardly projecting rib on the inner face of said connecting member, and an inwardly turned flange at the rear end of said housing, a pawl movably fitted between the side members of said housing and having at its rear end a lip which projects behind said inwardly turned flange, and having a transverse recess to receive the said rib and having rack teeth at its rear end and on that edge which faces the toothed edge of the shank.

2. In a wrench, the combination of a shank having a fixed jaw at one end and rack teeth along one edge, with a yoke having two straps which embrace the shank, the rear strap being longer than the other so as to permit a transverse movement of the

yoke relative to said shank, and said yoke having a housing on that side of the shank which carries the rack teeth, said housing comprising two side members and a connecting transverse member, the transverse member having an inwardly projecting transverse rib, and there being an inwardly turned flange at the rear end of said housing, a pawl movably disposed within said housing having teeth on its edge which faces the toothed edge of the shank and having a transverse recess on its opposite edge for engagement with said rib, and having a rearwardly projecting lip which projects behind said inwardly turned flange, said pawl having its front edge projecting beyond the housing and fashioned to serve as a jaw face.

3. In a wrench, the combination of a shank having a fixed jaw at one end and rack teeth along one edge, with a yoke having two straps which embrace the shank, the rear strap being longer than the other so as to permit a transverse movement of the yoke relative to said shank, and said yoke having a housing on that side of the shank which carries the rack teeth, said housing comprising two side members and a connecting transverse member, the transverse member having an inwardly projecting transverse rib and there being an inwardly turned flange at the rear end of said housing, a pawl movably disposed within said housing having teeth on its edge which faces the toothed edge of the shank and having a transverse recess on its opposite edge for engagement with said rib, and having a rearwardly projecting lip which projects behind the inwardly turned flange, said pawl having its front edge projecting beyond the housing and adapted to serve as a jaw face, said housing being also provided with a transverse shelf near its front end, and an expansible coiled spring compressed between said shelf and said pawl.

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

CLINTON W. STOVER.

Witnesses:

THOS. F. TURNER,
H. B. WEBBER.