

W. H. J. FITZGERALD.
PIPE WRENCH.
APPLICATION FILED JUNE 9, 1911.

1,004,561.

Patented Oct. 3, 1911.

Fig. 1

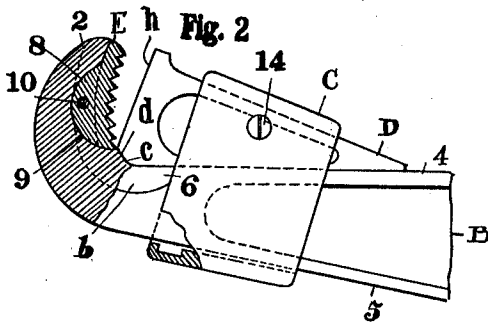
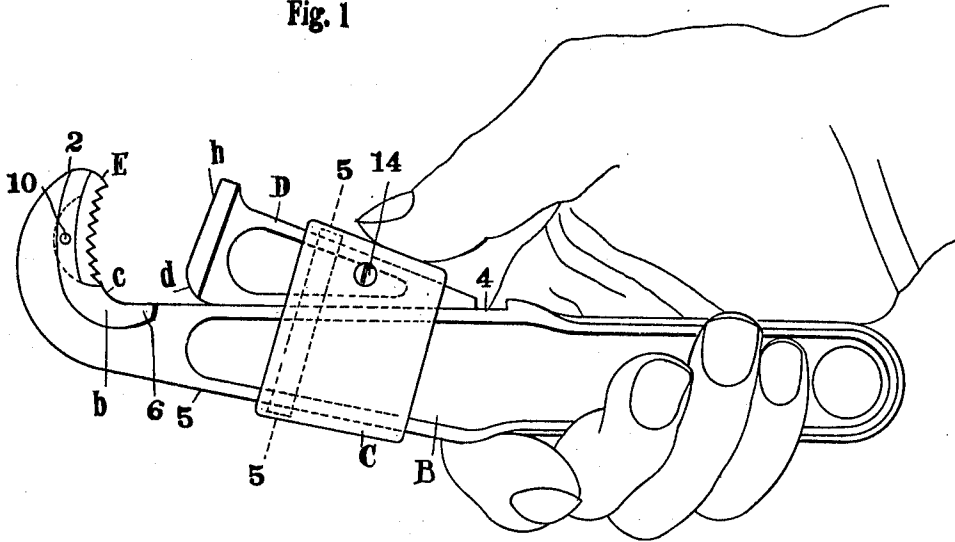
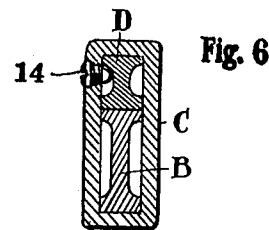
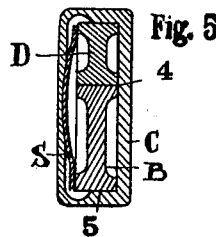
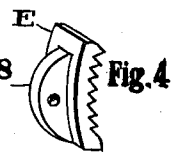
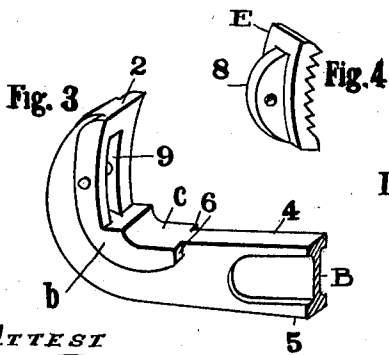
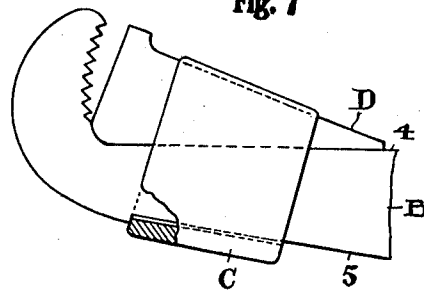


Fig. 7



ATTEST
E. M. Fisher
J. C. Mueser.

INVENTOR
William Henry Joseph Fitzgerald
BY Fisher & Villosio ARTYS.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY JOSEPH FITZGERALD, OF BRAINTREE, MASSACHUSETTS.

PIPE-WRENCH.

1,004,561.

Specification of Letters Patent.

Patented Oct. 3, 1911.

Application filed June 9, 1911. Serial No. 632,140.

To all whom it may concern:

Be it known that I, WILLIAM HENRY JOSEPH FITZGERALD, a citizen of the United States, residing at Braintree, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention appertains to pipe wrenches, and the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the wrench, open, and showing a hand and the manner of gripping and operating the wrench. Fig. 2 is a side elevation of the wrench with the jaws closed and partially sectioned. Fig. 3 is a perspective view of the outer end of the handle-bar and the jaw integral therewith, and Fig. 4 is a perspective view of a serrated steel insert for said jaw, as seen in Figs. 1 and 2. Fig. 5 is a cross section on line 5—5, Fig. 1, and Fig. 6 is a cross section on the line of the engaging screw. Fig. 7 is a side view of the outer end of a modification of the wrench showing the tapered shank of the handle-bar with a shoulder on its back adapted to serve as a stop for the yoke instead of being at the sides as in Fig. 3.

The present invention chiefly involves details of construction, the main parts of the wrench being disclosed in a general way in two United States Patents to John R. Long, of Akron, Ohio, and numbered 955,974 and 890,146, respectively, and some of the novel details herein being shown in a companion application filed by me and bearing Ser. No. 632,557.

In acknowledging the state of the art, particularly as disclosed in the said Long patents, it is conceded that the construction of a handle-bar or main bar B with an integral jaw 2 and a sliding jaw member D with a tapered or approximately wedge shaped shank and a substantially sleeve-shaped keeper or yoke C uniting said parts is not broadly new. That is, certain corresponding parts are shown in both said patents, but with this difference that neither of said patents nor my own improvement above mentioned shows a pipe wrench, whereas the invention herein is a pipe wrench and contains certain material modi-

fications of construction on the above which are new and original with me and upon which this application is based.

Now, having reference again to the drawings, it will be observed that the main bar B has inner and outer straight edges 4 and 5 respectively, the inner edge 4 being in line with the axis of the bar and terminating at the curved portion of the shank of jaw 2, while the outer edge 5 runs out at the back of said shank. From the ends of both said edges the shank of said jaw curves upwardly upon said jaw both within and without the same, and reinforcing beads *b* are formed on opposite sides thereof at or along its face portion which extend down into a substantially right angled position in the angle of said shank and terminate in shoulders 6 at each side. These shoulders perform the important office of stops for the yoke C to prevent the same from wedging upon the tapered shank of jaw D when the jaws are run together or in their closest possible relation, Fig. 2. Formerly, under Long's patents, there was nothing to prevent such wedging, and its constant recurrence was not only very annoying to the user but became an objection upon which the wrench frequently was condemned and thrown away. Now, I have cured this defect by providing definite stops 6 at the sides of the wrench against which the yoke impinges just before it reaches the binding position on the said parts and beyond which the yoke cannot go. Of course it is understood that the practically closed relation of the jaws in Fig. 2 is not a working relation, and that as said jaws are slightly opened the yoke becomes effective.

E represents a steel or suitably hardened jaw insert having serrations or teeth transversely upon its face and a central rib 8 on its back adapted to fit in a correspondingly shaped recess 9 in the front of jaw 2 and removably secured by a pin 10.

A peculiarity of the construction of bar B in addition to the enlargements *b* in or about the shank of jaw 2 is the curved surface *c* on the top of said shank at the end of the straight top edge 4 and which conforms to the curved engaging face of the insert E. The said curved surface *c* is engaged by the curved corner portion *d* of the jaw D and fixes the limit of its closing movement. From this lower point the face *h* of the jaw retreats at such decided inclination that its

upper portion is considerably removed from the opposite face of jaw 2, and this relation of said faces is sustained at all times regardless of how far apart they may be.

5 A screw 14 through the side of the yoke engages in a side depression in the member D and confines the parts operatively together.

A further improvement present in this wrench and also in my said companion application consists in the means shown for frictionally engaging the parts C and D for joint operation. This is designed to prevent the said parts from running wild when released and to bring them under a single control, whereby when the thumb engages one member to move it in either direction the other member or part will move with it and neither will move without personal actuation. This result is effected herein, as it is in my companion application above noted, by means of a flat strip or piece S of spring metal having upwardly bent ends adapted to bear against side edges of the respective jaw members and resting at its middle portion in a transverse recess milled into one side of the yoke near its edge. The said spring S need be only strong enough to make a comfortable frictional engagement between the said parts and so that if the thumb presses on the yoke forward the jaw D will move with it. This also causes said parts to hold adjusted positions together on the bar B regardless of how the wrench is held and without wedging them together, and leaves each part sufficiently free for individual movement when this becomes necessary.

What I claim is:

40 1. A pipe wrench comprising a handle-bar having a tapered shank and an integral jaw, said jaw having an inner serrated face

and side enlargements terminating in shoulders at either side of said shank, in combination with a slidable jaw having a tapered shank, and a yoke of wedge-shape adapted to engage said shoulders, whereby the movement of the yoke is limited relatively to the slidable jaw. 45

2. A wrench comprising a handle-bar having a tapered shank and an integral jaw, said jaw having re-inforcing ribs at either side extending along the top of said shank and terminating in shoulders, in combination with a slidable jaw having a tapering shank, and a wedge-shaped yoke to confine said slidable jaw upon said handle-bar and adapted to be limited in its forward movement by said shoulders. 50 55

3. A wrench comprising a handle-bar having a tapered shank and an integral jaw, in combination with a slidable jaw having a tapered shank, and a yoke of wedge-shape sleeved over the shanks of both the handle-bar and slidable jaw, and said handle-bar having a stop to limit the retiring movement of the slidable jaw and also a stop to limit the forward movement of the yoke. 60 65

4. A wrench comprising a handle-bar having a tapered shank and an integral jaw, a separate jaw having a tapered shank slidably mounted on said handle-bar, a wedge-shaped yoke slidably engaged with both the shanks of said handle-bar and slidable jaw, and separate stops to the front and rear of said yoke to limit the rearward movement of the slidable jaw and the forward movement of the yoke, respectively. 70 75

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

WILLIAM HENRY JOSEPH FITZGERALD.

Witnesses:

SACU G. HOLLANDER,
WALTER H. DRAPER.