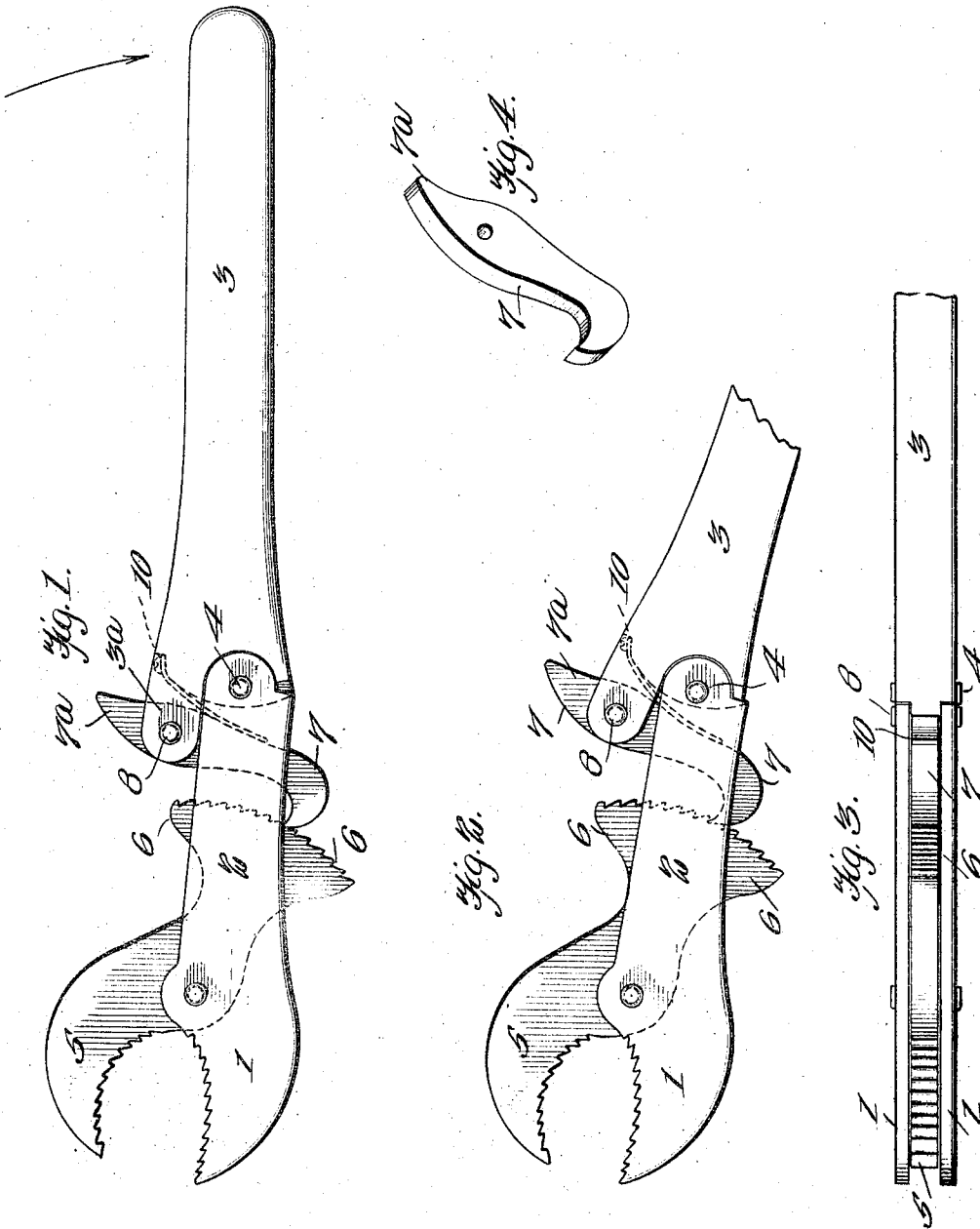


W. L. BESSOLO.
PIPE WRENCH.
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1,037,109.

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WITNESSES
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WILLIAM LOUIS BESSOLO, OF SAN DIEGO, CALIFORNIA.

PIPE-WRENCH.

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To all whom it may concern:

Be it known that I, WILLIAM LOUIS BESSOLO, a citizen of the United States, and a resident of San Diego, in the county of San Diego and State of California, have invented an Improvement in Pipe-Wrenches; of which the following is a specification.

This invention is an improvement in a type of pipe-wrenches I have devised in which the handle proper is hinged to the shank of the fixed jaw, a ratchet device being applied at the joint to operatively connect the handle and movable jaw and cause the jaws to open more widely or grip an object more firmly, according as the handle is pushed or pulled in one direction or the other. In this case, the invention is embodied in the construction and combination of a ratchet and pawl operatively connecting the handle and movable jaw as hereinafter described.

In the accompanying drawing, Figure 1 is a side view of the wrench showing the handle inclined at a slight angle to the shank of the fixed jaw, whereby the jaws are opened to their widest extent. Fig. 2 is a side view showing the handle adjusted at the opposite angle, whereby the jaws are gripped upon an object to which they are applied. Fig. 3 is an edge view. Fig. 4 is a perspective view of the hook pawl.

The numeral 1 indicates the fixed jaw, and 2, its shank, to which the handle 3 is connected by a rule-joint 4, the engaging shoulders of the respective parts permitting the handle to be moved a short distance, so that it may be placed at different angles to the shank 2, as illustrated by Figs. 1 and 2. The movable jaw 5 has a short shank which terminates in a segmental head 6 provided with ratchet teeth.

The handle 3 has a forwardly extended portion 3^a which is provided with a slot in which the hook pawl 7 is pivoted at 8. The pawl engages the ratchet 6 as shown, and is provided with a heel or short lever arm 7^a that projects laterally from the handle extension 3^a.

A plate spring 10, indicated by dotted lines in Figs. 1 and 2 and by full lines in Fig. 3, is secured to the handle in the slot of the extension 3^a, and the free end of said spring bears against the body of the pawl 7, so as to hold it normally engaged with the ratchet segment 6.

It will now be apparent that, when it is

desired to apply the wrench to a pipe or other cylindrical object, the handle is adjusted at the angle shown in Fig. 1, by which the jaws are opened to the widest extent permitted by the engagement of the pawl with the ratchet. Then, when the jaws have been applied to an object, a push or pull on the handle 3 in the direction indicated by the arrow in Fig. 1 will throw the handle into the opposite angle indicated in Fig. 2, in which operation the movable jaw is shifted so as to close more tightly upon the object to which the wrench is applied. In other words, when the handle is operated as described, the coaction of the pawl, ratchet, and movable jaw causes the jaws to approach each other nearer and thereby grip the object more firmly. It will be seen that the rule-joint permits the required swing of the handle on the shank of the fixed jaw, and that when pressure is applied to the handle in the direction of the arrow (Fig. 1), the shoulders of the respective parts 2 and 3 are brought into engagement, as shown in Fig. 2, so that the handle then constitutes practically a rigid extension of the shank.

By applying pressure to the convex side of the movable jaw, it may be closed upon an object, the ratchet in such case sliding over the nose of the pawl. Or, in order to adjust the movable jaw upon an object or to open it widely, pressure may be applied to the toe or projecting arm 3^a of the pawl, so as to press it in the direction of the arrow in Fig. 2, thereby releasing the pawl from engagement with the jaw.

What I claim is:—

1. The improved pipe wrench, comprising a fixed jaw and its shank, a handle hinged to the shank, a movable jaw pivoted to the fixed one and having its rear end constructed in segmental form and provided with teeth, and a pawl pivoted to the forward end of the handle and adapted to engage the toothed segment, as described.

2. The improved pipe wrench, comprising a fixed jaw and integral shank, a handle having a rule-joint connection with the shank and a pivoted movable jaw having its shank constructed in the form of a segment provided with ratchet teeth, a hook pawl pivoted to the forward end of the handle, and a spring attached to the handle pressing the pawl normally into engagement with the ratchet, as shown and described.

3. The improved wrench, comprising a fixed jaw and shank integral therewith and provided with a lengthwise slot, a movable jaw pivoted in said slot and the free end of its shank constructed in segmental form and provided with ratchet teeth, a handle pivoted to the shank of the fixed jaw, the two being constructed to form a rule-joint, a hooked pawl pivoted to the forward end of the handle and provided with a short lever arm projecting laterally, a spring attached to the handle and bearing against the hook end of the pawl and tending to hold it engaged with the ratchet, as shown and described.

4. The improved pipe wrench, comprising a fixed jaw and shank, a movable jaw pivoted thereto and having its rear end constructed in segmental form and provided with ratchet teeth, a handle pivoted to the shank in alinement therewith and both provided with shoulders adapted to engage when the wrench is operated and a spring-pressed pawl pivoted to the handle and engaging the ratchet, as shown and described.

WILLIAM LOUIS BESSOLO.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."