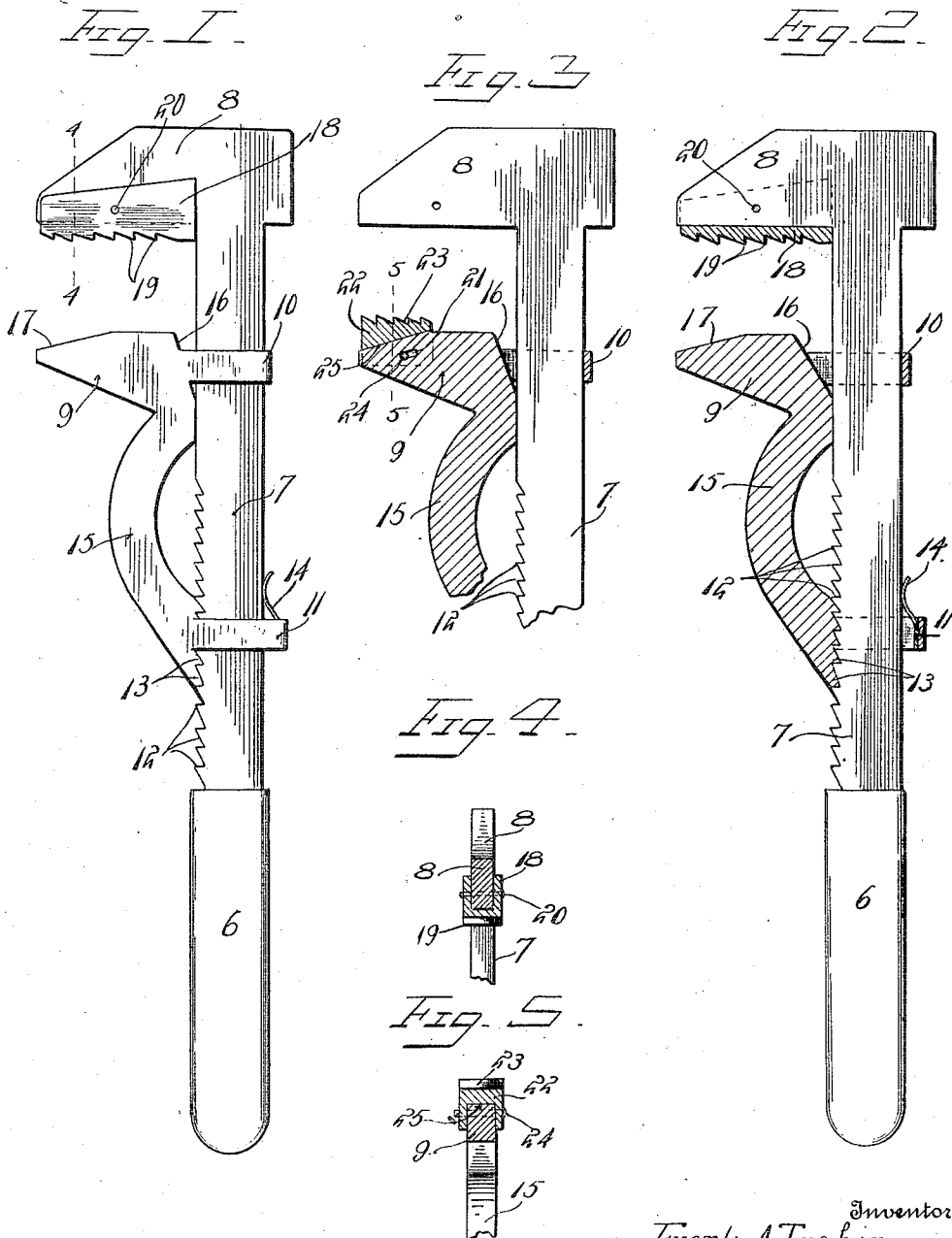


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WRENCH.  
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971,325.

Patented Sept. 27, 1910.



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# UNITED STATES PATENT OFFICE.

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## WRENCH.

971,325.

Specification of Letters Patent. Patented Sept. 27, 1910.

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*To all whom it may concern:*

Be it known that I, FRANK A. TRAHIN, a citizen of the United States, residing at Gillespie, in the county of Macoupin, State of Illinois, have invented certain new and useful Improvements in 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 relates to a wrench and more particularly to the class of combined pipe and nut wrenches.

The primary object of the invention is the provision of a wrench which may be utilized either as a pipe or nut wrench whereby they may be effectually manipulated.

Another object of the invention is the provision of a wrench in which its movable jaw will be automatically interlocked with the shank of its stationary jaw to effect a quick acting wrench and that will enable ready and easy adjustment of the movable jaw when the occasion may demand.

A further object of the invention is the provision of a wrench which is simple in construction and inexpensive in manufacture.

A still further object of the invention is to generally improve this class of tools or devices so as to add to their utility and durability as well as to perfect their efficiency in operation.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts, to be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred forms of embodiment of the invention, to enable those skilled in the art to practice the invention, and as pointed out in the claim hereunto appended.

In the drawings:—Figure 1 is a side elevation of a wrench constructed in accordance with the invention. Fig. 2 is a similar view, the same being shown partly in section. Fig. 3 is a fragmentary side elevation of a modification, the same being partly in section. Fig. 4 is a sectional view on the line 4—4 of Fig. 1. Fig. 5 is a sectional view of the line 5—5 of Fig. 3.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals, 6 designates a handle which may be of any desirable construction and made of any suitable material, the said handle being securely fitted on one end of a shank 7, the same being formed at its opposite end with a fixed or stationary jaw 8, of the ordinary construction. Slidably connected with the shank 7, is a movable jaw 9, the same being disposed against one edge of the shank and is provided with retaining straps or loops 10 and 11, the latter being of greater length than the strap or loop 10, to permit one extremity of the movable jaw to move outwardly away from the shank 7, for the purpose as will be hereinafter more fully described. In one edge of the shank 7, for a portion of its length is formed a series of gripping serrations or teeth 12, while the lower end of said sliding jaw 9, is formed with a series of gripping serrations or teeth 13, to engage the serrations or teeth 12, on the shank 7, to hold the said sliding jaw in its adjusted position. Suitably secured to the retaining strap or loop 11, is a leaf spring 14, the free end of which contacts with the shank 7, and serves to maintain the gripping teeth 13, of the movable jaw in locked engagement with the gripping teeth 12, on the shank 7, of the wrench.

Between the ends of the movable jaw 9, is formed an intermediate finger yoke 15, which enables an operator to manually grip the movable jaw and displace the same to disengage its teeth 13, from the teeth 12, on the shank 7, of the wrench. The upper end of the movable jaw 9, at its inner edge is beveled as at 16, to permit the other end of said movable jaw formed with a series of serrations or teeth 13, to move outwardly from the shank 7, and thereby free the serrations 13, from the serrations on the shank and thus permit longitudinal adjustment on the shank of the movable jaw as occasion may require. The engaging face of the movable jaw 9, at the front end thereof is beveled as at 17, which enables the introduction or the free insertion of a pipe, nut, or other piece of work between both jaws of the wrench when it is desired to engage the same therewith.

The stationary jaw 8, carries a detachable jaw 18, which is provided with a series of serrations or teeth 19, the detachable jaw being connected to the fixed jaw 8, by a pin 20, passed through the said detachable and

stationary jaw. When the detachable jaw is carried by the stationary jaw of the wrench it enables the latter to be used as a pipe-wrench.

- 5 In Figs. 3 and 5 there is shown a slight modification wherein the movable jaw is formed with an elongated slot 21, and detachably mounted upon this movable jaw 9, is a removable jaw 22, the same being provided with a series of serrations or teeth 23. 10 The removable jaw 22, carries a transverse pin 24, the latter engaging in the elongated slot 21, in the movable jaw 9, and in this manner the said jaw 22, will be permitted to 15 slide inwardly toward and outwardly from the shank 7, of the wrench upon the said movable jaw 9, so that a pipe will be firmly gripped between the stationary jaw 8, and the jaw 22. It is of course to be understood 20 that the detachable jaw 18, may be mounted upon the stationary jaw 8, when the removable jaw 22, is attached to the removable jaw 9, or the said jaw 18, may be dispensed with if found desirable. The removable jaw 25 22, at its face adjacent the beveled surface 17, of the movable jaw is correspondingly inclined as at 25, so that upon movement of the jaw 22, inwardly toward the shank 7, it will also approach the stationary jaw 8, 30 thereby firmly gripping a pipe between the jaws of the wrench.

From the foregoing, it is thought that the

construction and operation of the invention will be clearly understood without necessitating a more extended explanation. 35

What is claimed is:—

In a wrench, a shank having a fixed jaw at one end thereof and provided with rack teeth at one longitudinal edge, a handle fixed to the opposite end of the shank, a 40 movable jaw having an outwardly bowed extension provided with rack teeth at its free end to engage the rack teeth on the shank, loops integral with said movable jaw and embracing the said shank, one of the 45 loops being of greater size than the cross-sectional area of said shank, a leaf spring fixed to the last mentioned loop and frictionally engaging the longitudinal edge of the shank opposite the rack teeth, the said 50 movable jaw being provided with an inner beveled edge to permit rocking of the said jaw on the shank, the said movable jaw being provided with a further beveled surface intersecting its gripping face, and a toothed 55 jaw being of substantially U-shape in cross section to embrace the said fixed jaw and having detachable connection therewith.

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

FRANK A. TRAHIN.

Witnesses:

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ED. SMITH.