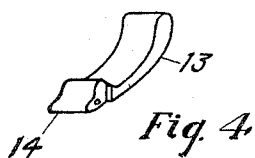
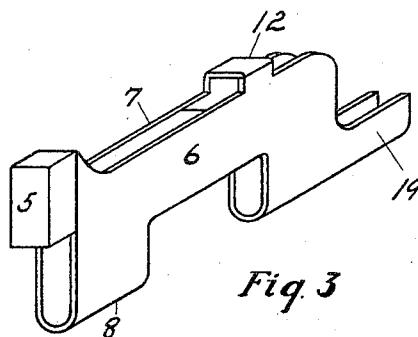
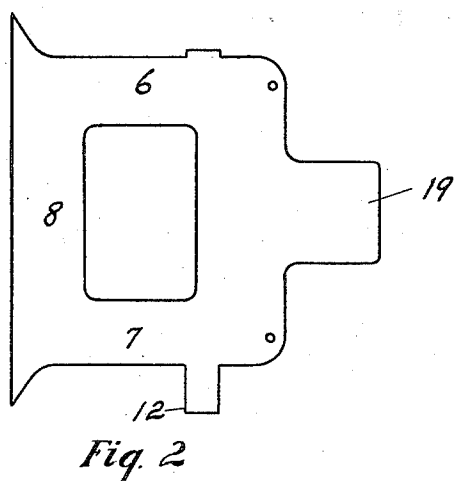
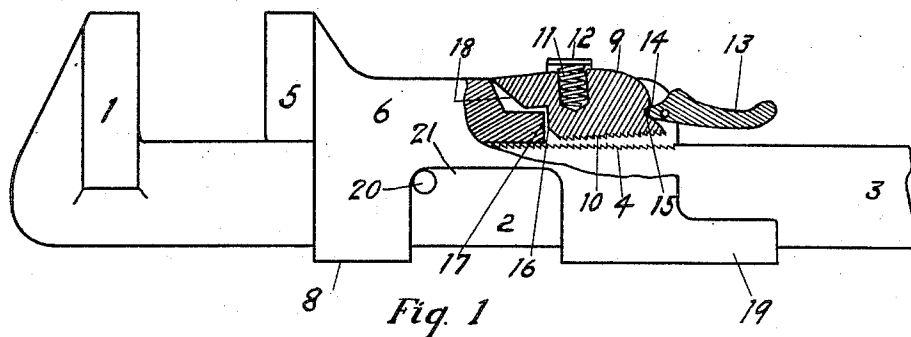


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WRENCH.

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WRENCH.

1,051,459.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY W. SIMMS, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, 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.

My invention relates to an improvement in wrenches and pertains more particularly to that class of nut wrenches having a rigid jaw and a slidable jaw movable toward and from the rigid jaw and adapted to be locked at various points of its travel.

The improvement relates to the construction of the movable jaw and the means by which it is locked in its various adjusted positions and unlocked from its connection with the rigid jaw.

The objects of my present improvement are to provide a slidable jaw of simple construction that can be readily formed from sheet metal, and to provide a locking pawl of simple construction that can be readily removed from the wrench for inspection or repair and can be replaced therein without the use of pivots or similar retaining devices.

To these and other ends, therefore, my invention consists in certain novel features and combinations of parts, together with their equivalents, as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings illustrating a preferred form of my invention, Figure 1 is a side view of a wrench broken away in part; Fig. 2 is a plan view of the blank from which the sheath of the sliding jaw is formed; Fig. 3 is a perspective view of the sliding jaw and sheath assembled; and Fig. 4 is a perspective detail of the thumb piece by which the pawl is actuated.

1 represents the fixed jaw having a stock 2 and a handle 3, one edge of the stock being formed with ratchet teeth 4. A movable jaw 5 is mounted on the stock 2, being received and rigidly secured between the two sides 6 and 7 of the sliding sheath 8 mounted on stock 2. A pawl 9 having ratchet teeth 10 formed on its lower edge is loosely mounted between the sides of the sheath 8 and near its rear end. A compression

spring 11 is inserted between the top of the pawl and the underside of a yoke 12 preferably formed by bending over a strip of metal projecting from one of the sides 6 or 7 of the sheath 8.

At the rear of the pawl and pivoted to the sides of the sheath 8 is a thumb piece 13 having a forwardly extending projection 14 received in a transverse notch 15 formed in the rear edge of the pawl 9. The pawl is formed with a shoulder 16 near its forward end, adapted to abut against a corresponding shoulder 17 formed in the movable jaw, and it is between these two shoulders that the strain is received when the wrench is used in tightening a nut.

The end 18 of the pawl is beveled, as shown in Fig. 1, and the upper part of the rear end of sliding jaw 5 is similarly beveled, thereby permitting the pawl to be easily lifted clear of the teeth 4 against the compression of spring 11 when the thumb piece 13 is pressed down. When so operated, the upper ends of the beveled members abut, as shown in Fig. 1, and form a fulcrum about which the pawl has a slight movement of rotating as it lifts, and at the same time, all liability of binding or sticking is avoided; and when released, spring 11 forces the pawl down quickly. Being unattached to the sheath, the pawl is capable of a slight endwise movement by which it accommodates itself to fit into the teeth of ratchet 4.

In practice I prefer to form the sheath 8 of a single piece of sheet metal, shaping it from a blank such as shown in Fig. 2, the sides of the blank being bent upwardly to receive the shank of the movable jaw 5 between them and being fixed thereto by welding or in any other suitable manner. The sheath 8 is provided at its lower part with a rearwardly extending guard 19. This guard is preferably located directly opposite the thumb piece 13 so that when the thumb piece is pressed down by the thumb of the operator to lift the pawl, the first finger rests under the guard 19, thereby enabling the jaw 5 to be slid back and forth easily and without binding. When thumb piece 13 is released, spring 11 quickly depresses the pawl and lifts the thumb piece. To limit the amount of travel of the movable jaw, a transverse pin 20 is secured to the stock 2, the pin being so placed that its upper surface will support the lower edge

21 of the sheath 8, thereby preventing the movable jaw from rubbing against the ratchet teeth 4 of the stock.

By the means above described I have produced a simple and inexpensive wrench of great strength, that is capable of being easily and quickly adjusted to suit various sizes of nuts, and having a pawl that can be readily removed and replaced, the functions of the pawl being performed without the aid of pins or pivots.

Having described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a wrench, the combination with a fixed jaw having a stock provided with ratchet teeth, a movable jaw having a shoulder, a sheath secured to said movable jaw and slidably mounted on said stock, a yoke on said sheath, a pawl loosely placed between the sides of said sheath, said pawl having ratchet teeth and having a squared shoulder at its forward end, a beveled shoulder on said movable jaw, and a beveled shoulder on said pawl engaging therewith to form a fulcrum, a compression spring mounted between the top of the pawl and the yoke, a rearwardly extending guard formed integral with the lower part of said sheath; a thumb piece pivoted to the sides of said sheath and having a forward projection adapted to engage the rear end of said pawl; a transverse pin secured to said

stock and adapted to slidably support the lower edge of said sheath to prevent contact of the movable jaw with the teeth of said stock.

2. In a wrench, the combination with a fixed jaw having a stock provided with ratchet teeth, a movable jaw having a shoulder, a sheath fixed to said movable jaw and slidably mounted on said stock, a yoke on said sheath, a pawl loosely placed between the sides of said sheath, said pawl having ratchet teeth and having a shoulder at its forward end and a notch at its rear end; a beveled shoulder on said movable jaw and a beveled shoulder on said pawl engaging therewith to form a fulcrum, a compression spring interposed between the top of the pawl and the yoke, adapted to normally press said pawl downward, and a thumb piece pivoted to the sides of said sheath and having a forward projection adapted to engage the notch of said pawl; a projecting member carried by said stock and slidably supporting the lower edge of said sheath to prevent contact of the movable jaw with the teeth of said stock.

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

HENRY W. SIMMS.

Witnesses:

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GEO. W. SMITH.

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