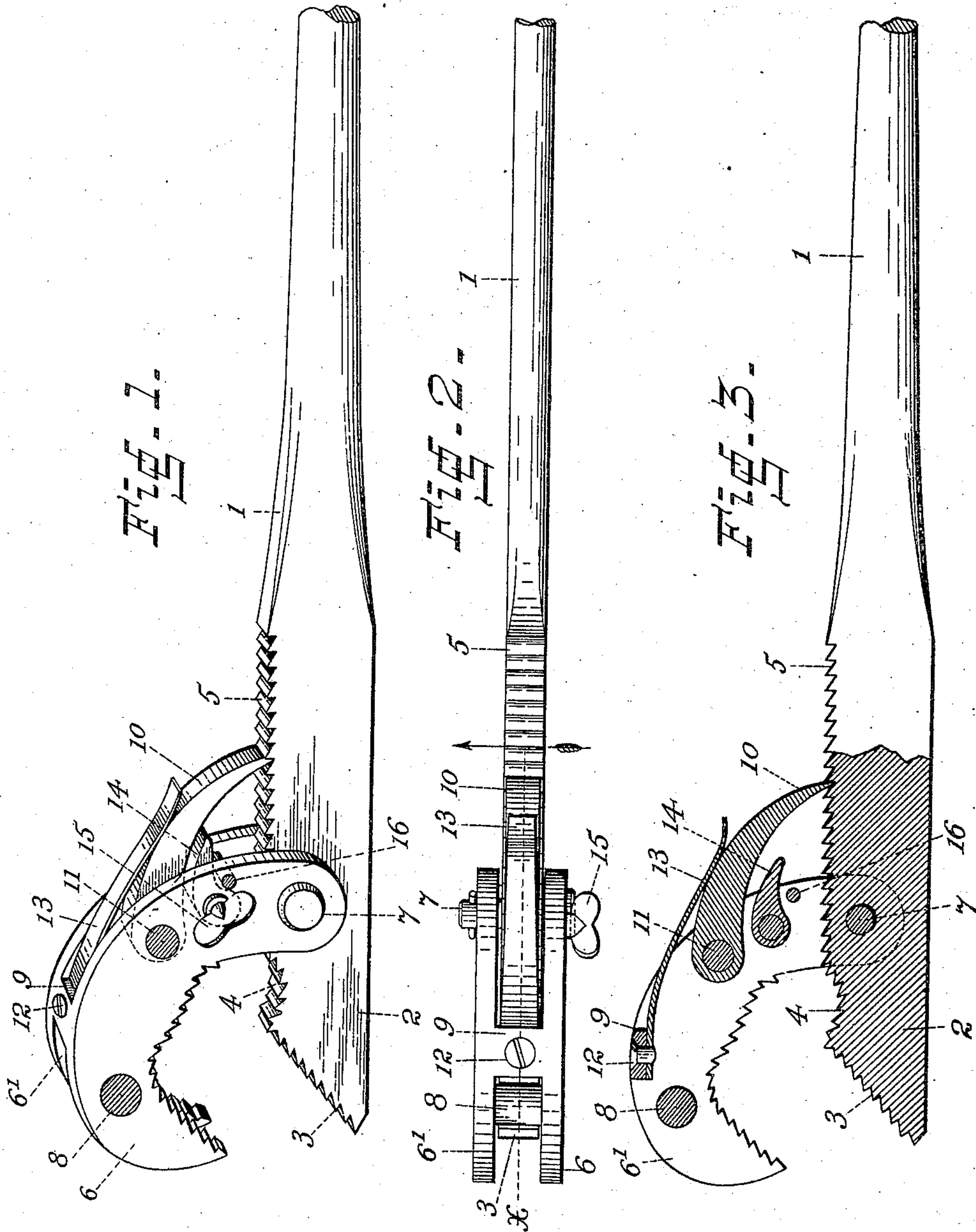


No. 849,813.

PATENTED APR. 9, 1907.

G. ROACH.
WRENCH.

APPLICATION FILED NOV. 12, 1906.



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UNITED STATES PATENT OFFICE.

GEORGE ROACH, OF AUBURN, NEW YORK.

WRENCH.

No. 849,813.

Specification of Letters Patent.

Patented April 9, 1907.]

Application filed November 12, 1906. Serial No. 343,017.

To all whom it may concern:

Be it known that I, GEORGE ROACH, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented new and useful Improvements in Wrenches, of which the following is a specification.

My invention has for its object the provision of a substantial and economical wrench which can readily be used and adapted to different sizes of piping and on various forms and dimensions of nuts; and it consists in certain peculiarities of construction and a combination of parts hereinafter specified and subsequently claimed, reference being had to the accompanying drawings, on one sheet, illustrating the wrench, in which—

Figure 1 is a perspective view of the wrench opened about midway of its capacity. Fig. 2 is a plan view looking down on the top side of the wrench; and Fig. 3 is a longitudinal vertical section of Fig. 2, taken on the dotted line X shown therein.

Similar figures for reference refer to similar parts in the several views.

In the practical construction and operation of my improvement a lever or handle 1 of sufficient length is provided, the jaw end being much wider, as shown at 2 in Fig. 1. The wider or jaw end 2 of the said handle 1 is cut off at an angle of about forty-five degrees, as shown, and this angle is provided with serrations or notches 3 throughout. At the upper end of the said angled portion and on the upper edge of the wider part 2 of the said handle 1 a portion thereof is concaved and also provided with serrations or notches, as seen at 4. The purpose of this notched concaved portion is for the admission of nuts of various forms and sizes. From thence the upper edge of the wider part 2 of said handle 1 is provided with notches or a ratchet 5, which is continued throughout to a point where the wider part 2 narrows down into the handle 1. At a point nearly midway of the wider end 2 of said handle 1, which may approximately be on a line drawn vertically from the ending inwardly of the notched concave 4 at its junction with the ratchet 5, is pivoted an upper jaw 6 and 6', the pivot-point being shown at 7.

As the construction of the upper jaw 6 and 6' is peculiar, reference is had to Fig. 3. It will be seen that the said upper jaw consists of two members 6 6', which are joined together by a tie-post 8 and a tie-piece 9, said

tie-pieces being a trifle longer than the thickness of the wider part 2 of said handle 1, which permits the lower or pivoted ends of said upper jaw 6 6' to be passed down on either side of the said wider part 2 of said handle 1, when they are pivoted thereon by the pivot-bolt 7, as already mentioned. It will be observed this mode of construction of the upper jaw permits of a central space wherein are carried the operative parts hereinafter described and explained.

Each of the members 6 6' are uniformly shaped and serrated as to their under edges, as seen in Figs. 1 and 3—that is, they are shaped and notched in such manner as to afford the greatest grasping power in conjunction with the angled end 3 and the concaved portion 4 of the wider end 2 of the handle 1, which constitutes practically the lower jaw of the wrench. At a suitable point between the two members 6 6' is pivoted a pawl 10 by the pivot-bolt 11. The said pawl 10 engages in the ratchet 5 of the wider part 2 of the handle 1, and thus serves to hold the upper jaw firmly in desired place when the wrench is brought in use.

On the tie-piece 9 is secured by a screw-bolt 12 the flat spring 13, the lower end of which bears on the upper side of the pawl 10 and keeps the latter in engagement with the ratchet 5 of the wider end 2 of the handle 1. In order that the said pawl 10 may be released from the said ratchet 5, as described, a cam-piece 14 is pivoted in the space between the members 6 6' of the upper jaw in such position that when it is actuated by the thumb-piece 15 it will be made to throw the said pawl 10 out of engagement with the ratchet 5 of the wider end 2 of the handle 1. It is also arranged relative to the pawl and the other parts of the wrench so it may not interfere with their working practically as shown.

A stop shaft or pin 16 is provided between the two members 6 6' of the upper jaw and a short distance below the said cam-piece 14, so the latter may not fall on the ratchet 5, as described.

It will be seen from the above description of the several parts composing my wrench that when it is desired to grasp small objects, like nuts of varying shapes and sizes, the upper jaw is brought down toward the concave part near the outer end of the wider part of the handle and there firmly held by the engagement of the pawl with the ratcheted

part of the handle. When desired to grasp larger objects, like piping of varying diameters, the cam-piece is turned by its thumb-piece until it bears on the under side of the 5 pawl, thus releasing it from the said ratchet and allowing the adjustment of the upper jaw on said piping, in which desired position it is again held by the engagement of the pawl in the ratchet, thus affording a wide 10 and effective range for the grasping power of the wrench on nuts and piping of varying shapes, sizes, and diameters.

Having thus described the several parts of my improvement and their operation, what 15 I claim as new, and desire to secure by Letters Patent of the United States of America, is—

In a wrench a handle or lever having at one end a lower jaw provided with a serrated angled end 3, a serrated concave 4, and 20 a ratchet 5, on the upper edge in combination with an upper jaw consisting of two uniform members 6, 6', having irregular ser-

rated under edges and connected to each other by a tie-post 8, and a tie-piece 9, the 25 lower ends pivoted on either side of the said lower jaw of said handle or lever by a pivot 7, a pawl 10, pivoted between said members 6, 6', and adapted to engage on the ratchet 5, a spring 13, attached to the tie-piece 9, 30 between said members 6, 6', and adapted to bear on the upper side of said pivoted pawl 10, a cam 14, having a thumb-piece 15, pivoted between said members 6, 6', and adapted to bear on the under side of said pivoted 35 pawl 10, and a stop bolt or shaft 16, under said cam-piece and between the said members 6, 6', of said upper jaw substantially constructed and arranged in the manner and 40 for the purpose herein described and shown.

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

GEORGE ROACH.

Witnesses:

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