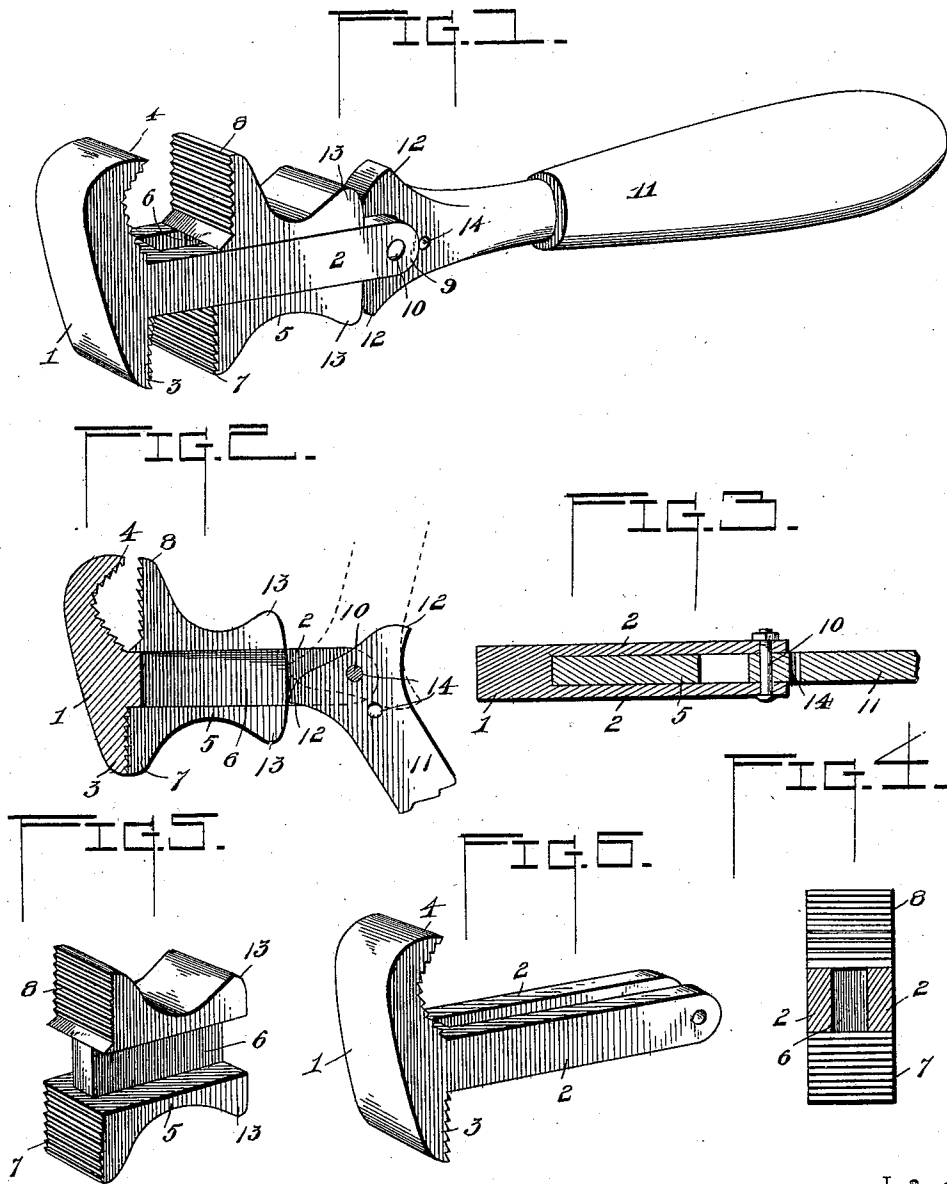


(No Model.)

J. H. FITZGERALD.
NUT AND PIPE WRENCH.

No. 601,015.

Patented Mar. 22, 1898.



Inventor

John H. Fitzgerald.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN H. FITZGERALD, OF FRANKFORD, WEST VIRGINIA.

NUT AND PIPE WRENCH.

SPECIFICATION forming part of Letters Patent No. 601,015, dated March 22, 1898.

Application filed December 11, 1896. Serial No. 615,340. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. FITZGERALD, a citizen of the United States, residing at Frankford, in the county of Greenbrier and State of West Virginia, have invented a new and useful Combined Nut and Pipe Wrench, of which the following is a specification.

The invention relates to improvements in combined nut and pipe wrenches.

The object of the present invention is to improve the construction of combined pipe and nut wrenches and to provide a simple, inexpensive, and efficient wrench which will possess strength and durability and which will automatically adjust itself to a nut or pipe.

A further object of the invention is to enable the combined pipe and nut wrench to be adjusted to adapt it for operating on large or small pipes or nuts and to enable it to grip either kind firmly.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in claims hereto appended.

In the drawings, Figure 1 is a perspective view of a wrench constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a similar view taken at right angles to Fig. 2. Fig. 4 is a transverse sectional view. Fig. 5 is a detail perspective view of the sliding jaw. Fig. 6 is a similar view of the rigid jaw.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a fixed or rigid jaw preferably formed integral with a shank 2 and provided with a nut-engaging portion 3, extending from the shank in one direction, and the pipe-engaging portion 4, projecting from the shank in the opposite direction. The shank, which is longitudinally slotted or bifurcated to form two sides, receives a sliding jaw 5, which is provided at its side faces with recesses 6, receiving the sides of the shank 2. The sliding jaw is provided with a nut-engaging portion 7 and a pipe-engaging portion 8, and the engaging faces of the fixed and sliding jaws are corrugated, as shown, to form teeth. The pipe-engaging portion 4 of the rigid jaw is

concavely curved to conform to the configuration of a pipe or rod.

The inner terminals 9 of the sides of the shank 2 are adjustably connected by a pivot-bolt 10 with an operating-handle 11. The operating-handle 11 is provided with opposite extensions or enlargements 12, forming cams and engaging extensions or enlargements 13 of the inner end of the sliding jaw. The extensions or enlargements 12 and 13 are rounded, as shown, and the operating-lever is adapted to be swung on the shank 2 of the rigid jaw to force the sliding jaw in the direction of the same for clamping a nut or pipe.

In applying the wrench to a nut, rod, or pipe the handle is swung in the direction the nut, rod, or pipe is to be turned, and the movement of the handle causes the jaws to clamp the nut, pipe, or rod automatically and engage the same firmly, the clamping action continuing as long as there is any pressure exerted on the handle 11. The handle is adapted to be swung in either direction, and in turning a pipe or nut the handle engages a sliding jaw directly beneath such pipe or nut, so that there is no twisting action on the shank or sliding jaw.

The operating-handle, which forms a cam-lever, has its pivoted end fitting snugly between the sides of the shank 2, and it is provided with two perforations 14 for the reception of the pivot-bolt 10 to enable the handle to be adjusted for clamping large or small nuts or pipes. As the perforations 14 are disposed on the handle in a central longitudinal series, any number of them may of course be provided, and by this construction the pipes will operate effectively on very small or very large pipes or nuts.

I attach importance to the employment of the series of apertures 14, arranged in the medial line of the lever and centrally between the oppositely-projecting cams 12 at the inner end of the lever and on opposite sides of the fulcrum 10 thereof. This arrangement enables either cam to be used to good advantage in adjusting the movable jaw of the wrench without reference to the position that the cam-lever occupies with relation to the movable jaw, and said cam-lever may be adjusted by means of the removable pin and the series of apertures 14 to enable the mov-

able jaw to be used on nuts or wrenches of different sizes.

It will be seen that the wrench is exceedingly simple and inexpensive in construction, that it is strong and durable, and that it is capable of automatically adjusting itself to a pipe or rod or the like. It will also be apparent that the clamping action of the jaws continues as long as there is any strain on the handle of the wrench and that the pressure is brought directly opposite the pipe or nut which is engaged in order to prevent any lateral strain or twisting action of the sliding jaw or the shank 2.

What I claim is—

1. The nut and pipe wrench herein shown and described, comprising a shank, slotted longitudinally to form parallel sides, 2, and provided at one end with the fixed jaw which is formed with oppositely-extending nut and pipe gripping faces, the slidable jaw provided in its side faces with longitudinal grooves, 6, to fit upon the parallel sides 2, said jaw formed at one end with the oppositely-extending nut and pipe gripping faces, and at its heel with the cam-formed edges 13, a lever having transverse apertures disposed in series longitudinally of said lever, in the median line there-

of, and formed at its extremity with the cams, 12, that lie on opposite sides of the fulcrum and are adapted to coact directly with the cam edges 13 of the slidable jaw, and a shiftable fulcrum-pin, 10, to adjustably connect the lever to the end of the shank, as set forth.

2. The combination with a stock having a fixed jaw, of a movable jaw slidably fitted on the stock and provided with the cam-formed edges 13 at its rear end, a lever provided at one end with the duplicate cams 12, which project from opposite sides of the lever and also provided with a series of transverse apertures 14 arranged in the medial line of the lever and between the oppositely-projecting cams 12 thereof, and a removable fulcrum-pin 10 adapted to fit in either of the apertures 14 of said lever to adjustably support the same on the stock and in operative relation to the slidable jaw, as and for the purposes described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN H. FITZGERALD.

Witnesses:

A. M. SCUTT,

L. W. SQUIRES.