(No Model.)

W. BILL.

WRENCH.

No. 491,513. Patented Feb. 14, 1893.

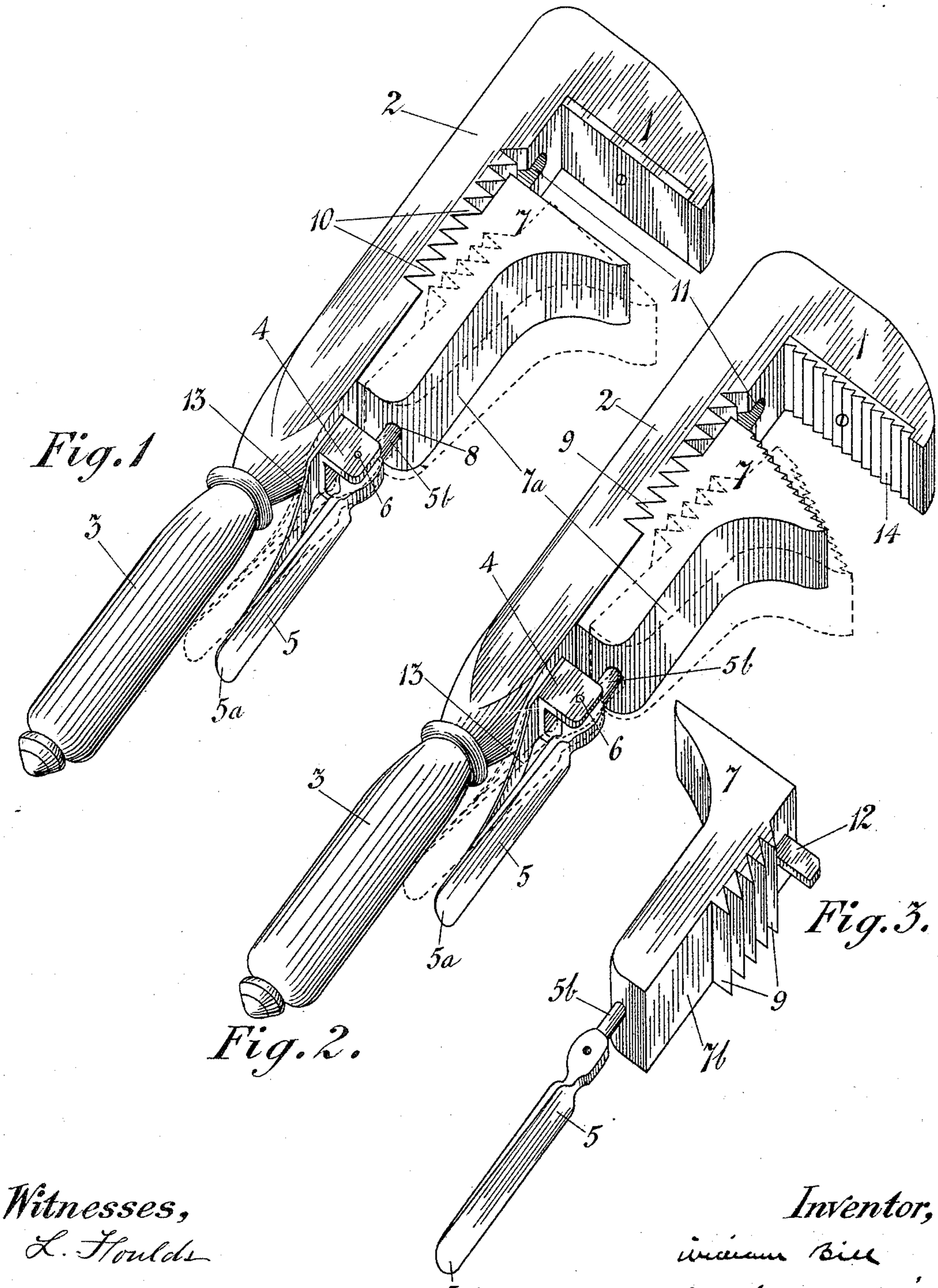

Fig. 1

Fig. 2.

Fig. 3.

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WILLIAM BILL, OF MONTREAL, CANADA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 491,513, dated February 14, 1893.

Application filed November 18, 1892. Serial No. 452,457. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BILL, engineer, of the city of Montreal, in the county of Jacques Cartier and Province of Quebec, Canada, have invented a certain new and useful Combined Monkey-Wrench and Pipe-Wrench; and I hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in wrenches; and the object of the invention is to so construct the wrench that the jaws can be interchanged and the wrench converted at any time into a monkey-wrench, pipe-wrench, stud-wrench, or a wrench for any similar purpose so that the one wrench can be employed for a multiple number of purposes; and the invention consists essentially of a wrench comprising a fixed jaw solid upon the shank which passes through or terminates in the handle, a lever pivotally connected to the shank, one end of which shank terminates in a rounded metallic bar, while the other end is so constructed as to be readily operated by the hand, a sliding jaw having a recess formed in it which is adapted to receive and into which enters the rounded end of the said lever, the inner face or that side of the sliding jaw adjacent to the shank being serrated or having formed thereon a series of teeth which are adapted to enter the corresponding serrated or toothed face of the said shank adjacent to the said sliding jaw, a longitudinal slot in said shank into which is adapted to enter a guide pin secured to or forming part of the adjacent face or side of the sliding jaw, the whole device being constructed and operated as hereinafter more fully set forth in the specification and more particularly pointed out in the claims.

In the drawings:—Figure 1 is a perspective view of what is commonly known as a monkey-wrench, showing the jaws opened to receive the nut to be turned, and also showing in dotted lines the lever depressed to throw the teeth of the sliding jaw out of engagement with the teeth of the shank in order that the said jaw may be moved either way along the said shank to receive the nut. Fig. 2 is a perspective view showing the device employed as a pipe wrench and also showing in dotted lines the sliding jaws ready to be adjusted. Fig. 3 is a perspective view of the lever and the sliding jaw.

Like numerals of reference refer to like parts throughout the specification and drawings.

The wrench consists essentially of a fixed jaw 1, solid upon the square or rectangular bar serving as the shank and terminating in the handle 3 for the wrench.

Formed or integral with the shank 2 and on the same side of the shank as the fixed jaw 1 are two lugs 4.

Located between the lugs 4 is a lever 5 pivotally secured to the said lugs by a pin 6 which passes through the said lugs and through the middle portion of the lever 5. This pin 6 serves as the fulcrum for the lever 5. That end 5^a of the lever 5 contiguous to the handle 3 is shaped and arranged to be readily gripped by the hand and to be depressed in and toward the handle 3. The opposite end 5^b of the lever 5 is rounded to form a spindle upon which slides the movable jaw.

The sliding jaw 7 is of any ordinary shape either for a monkey-wrench or pipe-wrench.

Formed in the body 7^a of the sliding jaw 7 is a socket or recess 8 into which is adapted to enter the end 5^b of the lever 5. It might here be stated that the sliding jaw 7 moves upon the end 5^b of the lever 5 and the depression of the opposite end 5^a of the lever 5 moves the end 5^b and sliding jaw 7 away from the shank 2. The face 7^b of the sliding jaw 7 adjacent to the shank 2 is serrated or has formed upon it a series of teeth 9 which engage with a corresponding serrated or toothed portion 10 of the shank 2.

Formed mediately in the shank 2 is a longitudinal slot 11 into which enters a guide pin 12 forming a part of the sliding jaw 7 and by means of which the jaw is rigidly held and prevented from moving laterally.

Secured to the handle 3 is a spring 13 which is adapted to throw outward after depression the end 5^a of the lever 5. The disengagement of the teeth 9 on the sliding jaw 7 from the teeth 10 of the shank 2 enable the sliding jaw 7 to be moved longitudinally along the said shank and to hold the said shank firmly in place during their engagement. As the end

5^b of the lever 5 while the said lever is depressed throws the said sliding jaw 7 from the shank 2 and consequently the teeth 9 of the sliding jaw 7 from the toothed portion 10 of the shank 2 the said jaw can be readily moved longitudinally along the said shank. By withdrawing the pin 6 the lever 5 can be separated from the lugs 4 and the said lever and sliding jaw can be lifted away from the shank in order to separate the sliding jaw from the said lever to replace the sliding jaw in use by another when required or to change the sliding jaw from a jaw of a monkey-wrench to a jaw of a stud-wrench. By means of this construction and this system of interchangeable jaws one wrench can be made to perform the work which has hitherto been required to be done by a multiple number of wrenches.

The fixed jaw 1 is also constructed to have a gripping face so that when the wrench is to be used as a pipe-wrench a serrated face may be put in to grip the pipe and when the said wrench is to be used for turning nuts a flat face may be inserted. This consists as shown in the drawings of a fixed jaw provided with an interchangeable face 14 comprising a plate of the same width as the jaw but slightly less in length. The point of the jaw over laps the edge of the said plate to form what might be termed a guide or means for preventing the plate shifting its location when in use. The plate 14 being more firmly secured by means of a pin or screw.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A wrench comprising a shank, a fixed jaw solid upon the shank, a sliding jaw having teeth formed on its face contiguous to the shank, teeth formed upon the face of the shank contiguous to the sliding jaw, the teeth of the sliding jaw adapted to mesh with the teeth of the shank, a lever pivotally connected to said shank and adapted to lift the said sliding jaw outward to disengage the teeth of the sliding jaw from the teeth of the shank, substantially as and for the purpose described.

2. A wrench comprising a shank, a fixed jaw solid upon said shank, said shank terminating in and forming a handle, a lever pivotally connected to said shank, a sliding jaw sliding along said lever, teeth formed on said sliding jaw, teeth formed on said shank, the teeth on said sliding jaw adapted to mesh with the teeth on said shank to arrest the longitudinal movement of said sliding jaw, said lever adapted to move said jaw outward from said shank and to throw the teeth of said jaw out of engagement with the teeth on said shank, a longitudinal slot formed in said shank, a pin secured to said sliding jaw and adapted to enter said slot, substantially as and for the purpose described.

Montreal, October 20, 1892.

WILLIAM BILL.

In presence of—

I. LARMOUTH,

GEO. H. BISSETT.