No. 608,866. Patented Aug. 9, 1898.

J. L. JONES.

WRENCH.

(Application filed Sept. 24, 1897.)

(No Model.)

FIG. 1.

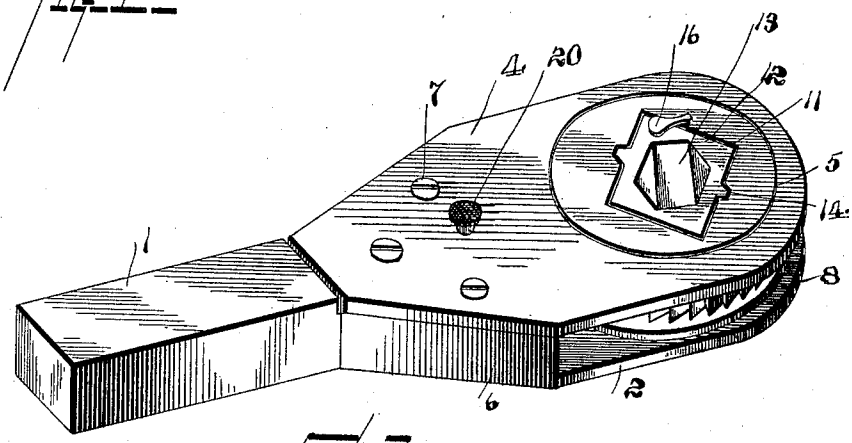


FIG. 2.

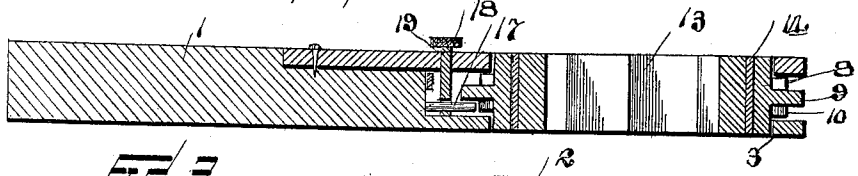


FIG. 3.

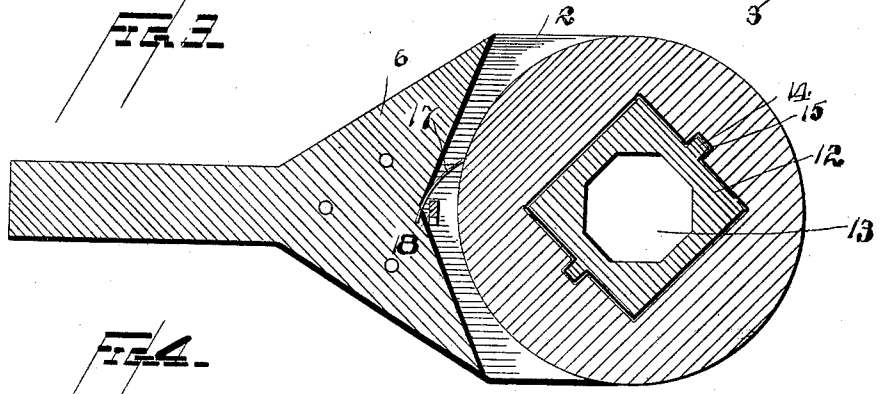
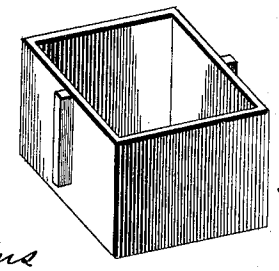


FIG. 4.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 608,866, dated August 9, 1898.

Application filed September 24, 1897. Serial No. 652,795. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LEON JONES, a citizen of the United States, residing at Rossburg, in the county of Suwannee and State of Florida, 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.

This invention relates to wrenches; and the object in view is to provide a reversible ratchet-wrench designed to engage nuts of different shapes and sizes and to either tighten or loosen the same.

The detailed objects and advantages of the invention will be pointed out in the course of the ensuing description.

The invention consists in an improved ratchet-wrench embodying certain novel features, details of construction, and arrangements of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a wrench constructed in accordance with this invention. Fig. 2 is a longitudinal section through the same. Fig. 3 is also a longitudinal section taken at right angles to Fig. 2. Fig. 4 is a detail perspective view showing one form of bushing.

Similar numerals of reference designate corresponding parts in all the figures.

The improved wrench contemplated in this invention embodies, essentially, a handle 1 of the desired length to give the necessary leverage. The outer end of this handle is provided with a kite-shaped enlargement or plate 2, forming one side of the casing in which the ratchet-wheel is mounted. The plate 2 is provided with a circular opening 3, and opposite the plate 2 is a second removable plate 4, corresponding in shape to the plate 2 and also provided with a circular opening 5. The plate 4 is secured to a thickened web 6 upon the inner side of the plate 2 by means of screws or other suitable fastenings 7.

Arranged between the plates 2 and 4 is a double ratchet-wheel 8, embodying a central rim 9, upon each side of which is arranged a circular series of peripheral teeth 10, the teeth on one side being disposed reversely to those on the other side. The wheel 8 is provided with a square aperture 11, in which is removably fitted an exteriorly-square bushing 12. This bushing is provided with a central opening 13, adapted to fit snugly over the nut to be tightened or loosened, and the bushing is further provided upon its outer surface and upon two sides thereof with transversely-extending ribs 14, which extend from one side of the bushing toward the other side, but which terminate short of the other side of the bushing, so as to correspond with and fit into grooves 15, formed in the bore of the ratchet-wheel, the said grooves correspondingly terminating short of one side of said wheel. When the bushing 12 is inserted in the ratchet-wheel, the ends of the ribs 14 seat themselves against the termini of the grooves 15, thus preventing the escape of the bushing in one direction, while the accidental displacement of the bushing in the opposite direction is prevented by means of a turn-button or catch 16, secured to the wheel 8.

Arranged between the plates 2 and 4 are two pawls 17, each of which is preferably in the form of a leaf-spring, and interposed between said pawls is a cam 18, adapted to alternately act upon said pawls for throwing one or the other into and out of engagement with one or the other series of ratchet-teeth 10, according to the direction in which the wrench is to operate. The cam 18 is provided with a reduced shank 19, which extends through an opening in the plate 4, where it is provided exteriorly with a suitable head 20, whereby it may be turned for effecting an adjustment of the pawls.

It will be understood that a series of interchangeable bushings 12 is provided, so that various sizes and shapes of nuts may be engaged and operated by the improved wrench, also that by the construction described the wrench may be used either with a right or left hand nut and operates equally as well when tightening as loosening nuts.

The wrench is especially designed for use in large establishments, carriage-factories, railway-depots, &c.

It will be understood that the wrench hereinbefore described is susceptible of various changes in the form, proportion, and minor details of construction, which may accord-

ingly be resorted to without departing from the principles or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is—

In a wrench, the combination with a handle having at one end opposing and separated plates, one of which is removable, and both of which have circular openings, of a ratchet-wheel mounted between said plates and having a square opening therein, two rows of reversely-facing and radially-projecting teeth on the periphery of said wheel, a circumferential flange or rib located between the two rows of teeth and projecting radially beyond the extreme outer edges thereof, pawls arranged in different planes and on opposite sides of said circumferential flange for alternately engaging said ratchet-wheel, a cam for alternately throwing said pawls into and out of engagement with said wheel, and a bushing having a nut-receiving recess and removably fitted in said wheel, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH LEON JONES.

Witnesses:
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