(No Model.)

H. L. BUTLER.

NUT WRENCH.

No. 602,054. Patented Apr. 12, 1898.

Fig. 1.

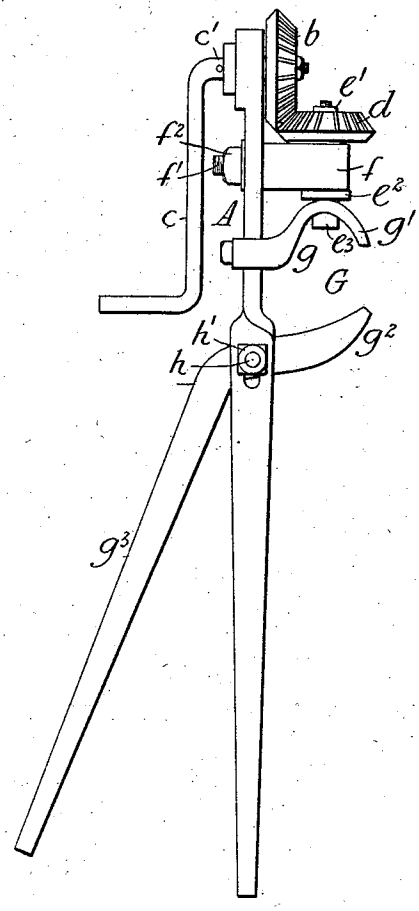
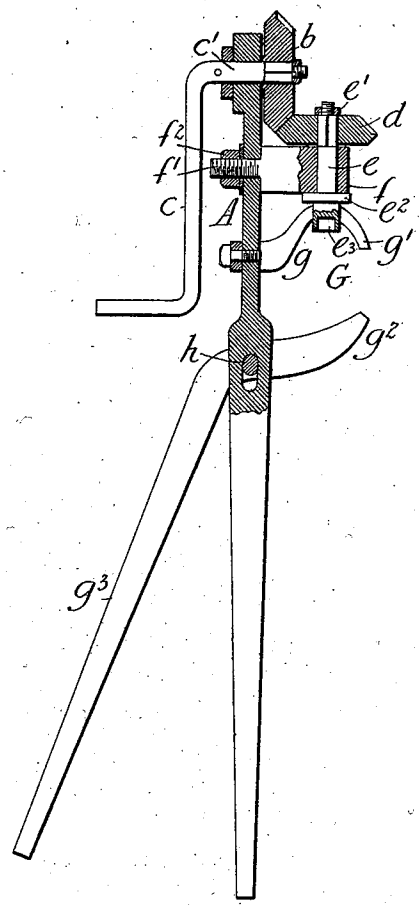


Fig. 2.



WITNESSES

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NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 602,054, dated April 12, 1898.

Application filed December 11, 1897. Serial No. 661,578. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. BUTLER, a citizen of the United States, residing at Emerson, in the county of Dixon and State of Nebraska, have invented certain new and useful Improvements in Nut-Wrenches; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to nut-wrenches, and is directed more particularly to that class of such devices which are adapted for use in the manipulation of nuts employed to secure together the members of a vehicle-wheel, although certain of the features of the invention are susceptible of embodiment in other types of wrenches adapted for other uses.

The nature of the invention will be readily understood from a reading of the following detailed description when taken in connection with the accompanying drawings, in which—

Figure 1 is a view in elevation of my improved wrench, and Fig. 2 is a broken sectional view.

Referring to the said drawings by letter, A denotes a bar, at the upper end of which is a bevel gear-wheel *b*, said wheel being mounted on the shaft portion *c'* of an operating crank-handle *c*. This wheel *b* meshes with a second bevel gear-wheel *d*, mounted on a spindle *e*, which is journaled in a bracket *f*, said bracket being secured to the bar A by means of a threaded pin *f'* and a nut f^2. The upper portion of the spindle is squared for engagement with a corresponding opening in the gear-wheel *d*, and beyond the squared portion the spindle is reduced in diameter and is threaded to receive a nut *e'*, by which means said wheel is made rigid with the spindle. The spindle has near its other end a flange or collar e^2, which abuts against the under side of the bracket and coöperates with the wheel *d* to prevent endwise movement of the spindle. Beyond the flange or collar the spindle partakes of the form of a wrench-head e^3, being socketed to conform to the size and shape of the nut which it engages. Obviously by removing the nut *e'* the spindle may be withdrawn and another spindle having a socket conformable to a different size or shape of nut may be inserted. It is also within the scope of my invention to construct the lower end of the spindle to receive removably separately-made wrench-heads having sockets of different sizes or shapes, and in such a construction it is obvious that the spindle need not necessarily be made removable.

Adjacent to the wrench-head is provided the fixed jaw *g* of a clamp G, which clamp is employed in practice for firmly grasping the wheel or other device during the wrenching operation. This jaw is bolted or otherwise secured to the bar A, and its engaging end *g'* is bifurcated and curved to obtain in practice the proper bearing. The movable jaw g^2 of the clamp is pivotally secured on the bar A by means of a bolt *h* and nut *h'*, and g^3 is a handle by which said jaw may be moved to or from the fixed jaw. For the purpose of adjustment the opening in the bar A for the bolt *h* is of slot form, and said bolt is shouldered to provide a stop for the nut *h'*, whereby binding of the movable jaw is prevented. That portion of the bolt which is within the slot is squared to prevent its rotation and the consequent accidental loosening of the nut.

In the application of the device to the securing-nuts on a vehicle-wheel the fixed jaw is brought against the inner side of the wheel-rim and the nut-socket is fitted over the nut. The jaw g^2 is then brought against the outer side of the rim by moving the handle g^3 toward the bar, and the outer end of said movable jaw is caused to abut against the head of the wheel-bolt. The operating-handle *c* is then turned and the spindle rotated through the interposed gearing, with the result that the nut is readily and rapidly loosened and removed. Substantially this operation is effected in the tightening of the nuts, the only difference being in the reverse rotation of the operating-handle.

The advantages resulting in the use of my improved wrench will be obvious to those skilled in the art. Not only is the saving of

labor effected, but the operations are attended with neatness and despatch. Moreover, the adjustable feature of the clamp and the provision of the changeable wrench-heads greatly enhance the usefulness of the device.

The wrench may be inexpensively constructed, and, having few parts, is not liable to disorder.

I claim as my invention—

1. In a nut-wrench, the combination with a bar carrying a fixed jaw and a movable jaw pivoted thereto, a spindle mounted in a bearing on said bar, a wrench-head carried by said spindle and located at said fixed jaw, and means for rotating said spindle substantially as described.

2. In a nut-wrench, the combination with a clamp comprised of a fixed and a movable jaw, said fixed jaw having a bifurcation, of a spindle, a wrench-head carried by the spindle and located at the bifurcation, a bevel gear-wheel on said spindle, a second bevel gear-wheel meshing with the aforesaid gear-wheel, and a crank-handle connected with the second wheel to operate it, substantially as described.

3. In a nut-wrench, the combination of a slotted bar, a movable clamp-jaw pivoted on a bolt adjustable in the bar-slot, a fixed clamp-jaw secured to said bar adjacent to the movable jaw, and having its outer end bifurcated and curved as described, a bracket on said bar, a spindle journaled in said bracket having at its lower end a wrench-head, and having at its upper end a squared portion and a reduced screw-threaded portion, a bevel gear-wheel on the squared portion, a nut on the reduced portion, and a second bevel gear-wheel meshing with the aforesaid gear-wheel and mounted on an operating crank-shaft journaled in the upper end of said bar, substantially as described.

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

HENRY L. BUTLER.

Witnesses:

PAUL BERGEN,

H. F. MOSEMAN.