(No Model.)

W. H. COX.

NUT WRENCH.

No. 466,071. Patented Dec. 29, 1891.

Fig 4

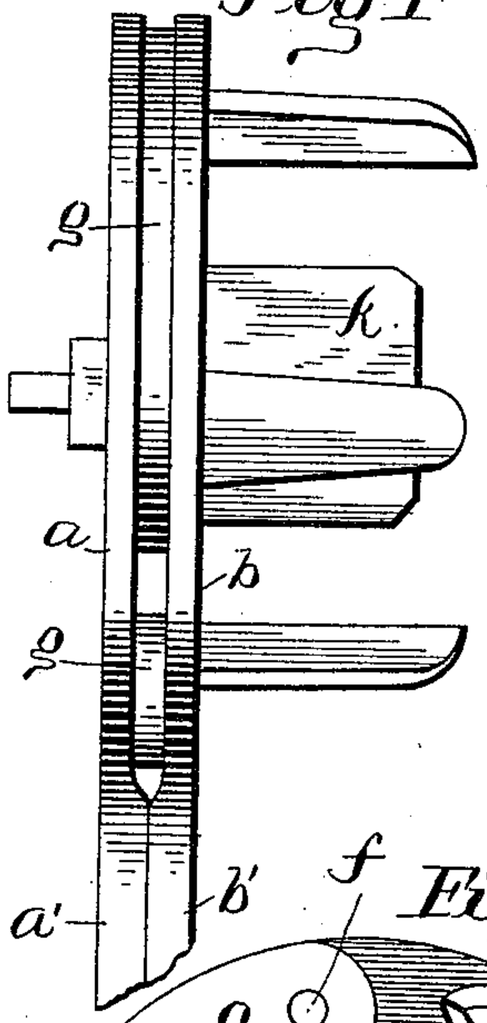


Fig 1

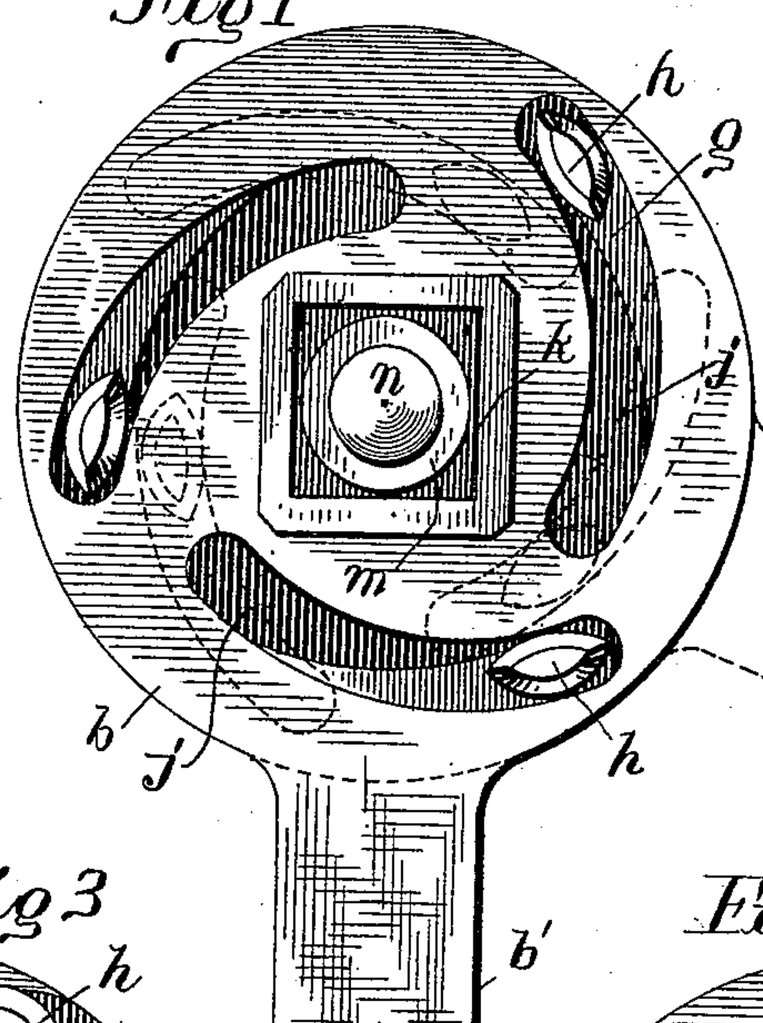


Fig 3

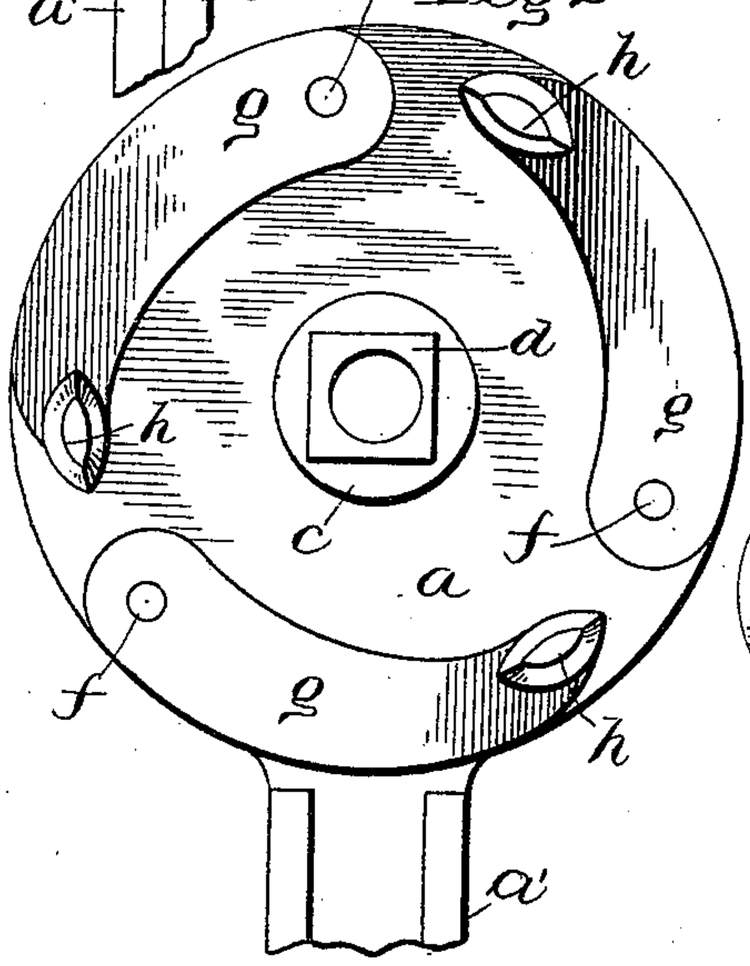


Fig 2

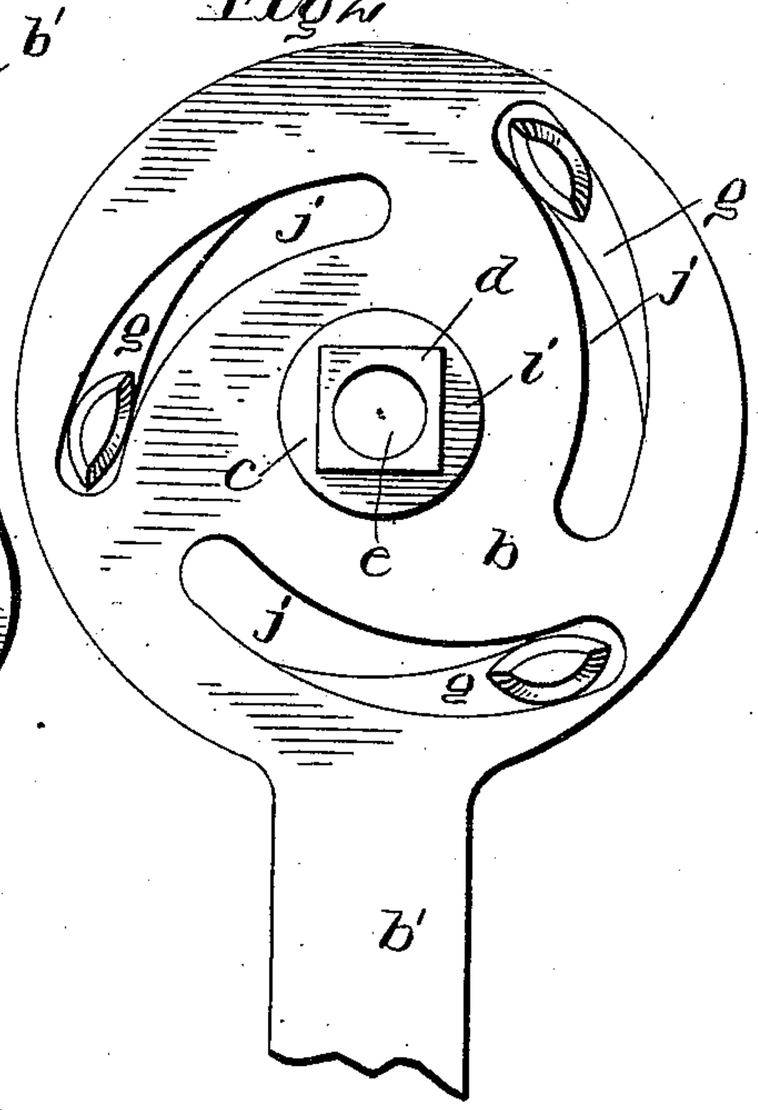
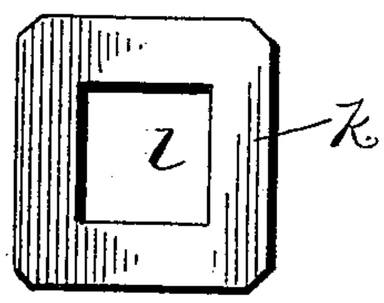


Fig 5



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. COX, OF VIRDEN, ILLINOIS.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 466,071, dated December 29, 1891.

Application filed June 20, 1891. Serial No. 396,922. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. COX, a citizen of the United States, residing at Virden, in the county of Macoupin and State of Illinois, have invented certain new and useful Improvements in Nut-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.

My invention relates to that class of carriage-wrenches adapted to grasp the nut and wheel together, so that both can be rotated at the same time in applying and removing the nut.

The object of my invention is to provide a more simple, convenient, and desirable device for accomplishing this purpose.

In order that my invention may be understood, I will now proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a front view showing the wrench as it is first applied to the nut in full lines and the position it assumes when locked to the hub of the wheel in dotted lines. Fig. 2 is a front view showing the nut-socket removed and the handles being broken away. Fig. 3 is a view of the inner side of the lower member, the handle being broken away. Fig. 4 is a side view of the device, the handles being broken off. Fig. 5 is an under side view of the nut-socket.

The wrench consists, principally, of two removable members, to one of which the various parts are attached. The lower member consists of a plate *a*, provided with a laterally-projecting handle *a'*, and the upper member consists of a plate *b*, provided with a laterally-projecting handle *b'*. At the center of the inner side of the plate *a* of the lower member is a circular boss *c*, provided at top with a non-circular or square portion *d*. Through the non-circular portion *d*, the boss *c*, and the plate *a* passes the bolt-hole *e*. Near the periphery of the plate *a* is a series of studs or pivots *f*, arranged concentrically with boss *c*. Pivoted at their inner ends on these studs *f* is a series of curved arms *g*, that move over and upon the inner side of the plate *a*. Each arm *g*, has at its outer or free end a laterally and forwardly projecting jaw or finger *h*, which jaws are adapted to spread or contract with the arms. At the center of the plate *b* of the upper member is an annular opening *i*, which receives the circular boss *c*. Also formed in plate *b* is a series of equally-spaced eccentric slots *j*, which are arranged similarly. The jaws or fingers *h* project through these eccentric slots *j* for the purpose to be hereinafter specified.

The nut socket or box *k* may be made of different sizes to fit different-sized nuts and is provided at its bottom with a non-circular or square opening *l*, corresponding to the non-circular portion *d* of the boss, which fits in the opening and prevents the movement of the nut-socket.

m is a washer, which is of greater diameter than opening *l* and is placed within the nut socket or box *k*, through which washer passes the bolt *n*, which also passes through bolt-hole *e*.

In operation the nut-socket is placed over the nut in the hub and the handles of the wrench drawn apart, contracting the moving jaws *h*, so as to firmly take hold of or clamp the outside of the hub-band. This holds the nut securely and rigidly in its seat in the end of the hub. The wheel being now revolved rapidly backward, the nut is quickly unscrewed, and the wheel may be removed and set to one side while the lubricant is being applied. The wheel is now replaced on the axle and revolved forward until the nut is screwed home.

Slight changes apparent to any skilled mechanic will readily suggest themselves without departing from the scope and spirit of my invention.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a nut-wrench, the combination of a plate provided with gripping-jaws movable toward and from the axis of the plate, another plate adapted to actuate said jaws, and a nut socket or box fixed to one of the plates, said plates and socket having their axes in the plane of the axis of the nut to be operated upon, as and for the purpose substantially as described.

2. In a nut-wrench, the combination, with a plate provided with a handle, of gripping-jaws movable toward and from the axis of the plate, another plate provided with a handle and eccentric surfaces for actuating said jaws, and a nut-socket located at the center of the plates, as set forth.

3. In a nut-wrench, the combination of a pair of plates having a common axis and radial handles, a nut-socket located at the center of the plates, and gripping-jaws movable toward and from the axis of the plates, as set forth.

4. In a nut-wrench, the combination, with one member provided with a nut-socket and with a movable series of jaws, of another member provided with eccentric slots through which the jaws project, whereby when the members are moved the jaws will be operated, substantially as set forth.

5. In a nut-wrench, the combination, with a lower plate provided with a handle and a movable series of jaws and a nut-socket on the plate, of another and upper plate provided with a handle and constructed with eccentric slots through which the jaws project, whereby when the members are moved the jaws will be operated, substantially as set forth.

6. In a nut-wrench, the combination, with one member provided with a circular boss, a nut-socket mounted on the boss, and a movable series of jaws or fingers, of another member having a circular opening to receive said boss and constructed to operate said jaws or fingers, substantially as set forth.

7. In a nut-wrench, the combination, with a lower plate provided with a handle, a central circular boss on said plate, a nut-socket mounted on the boss, a pivoted series of arms on said plate, and jaws projecting from the arm, of an upper plate provided with a handle and having a circular opening to receive said boss, said upper plate also being constructed with an eccentric series of slots through which the jaws project, whereby when the handles are moved the jaws will be operated, substantially as set forth.

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

WILLIAM H. COX.

Witnesses:
GEO. H. HILL,
G. J. PATTISON, Jr.