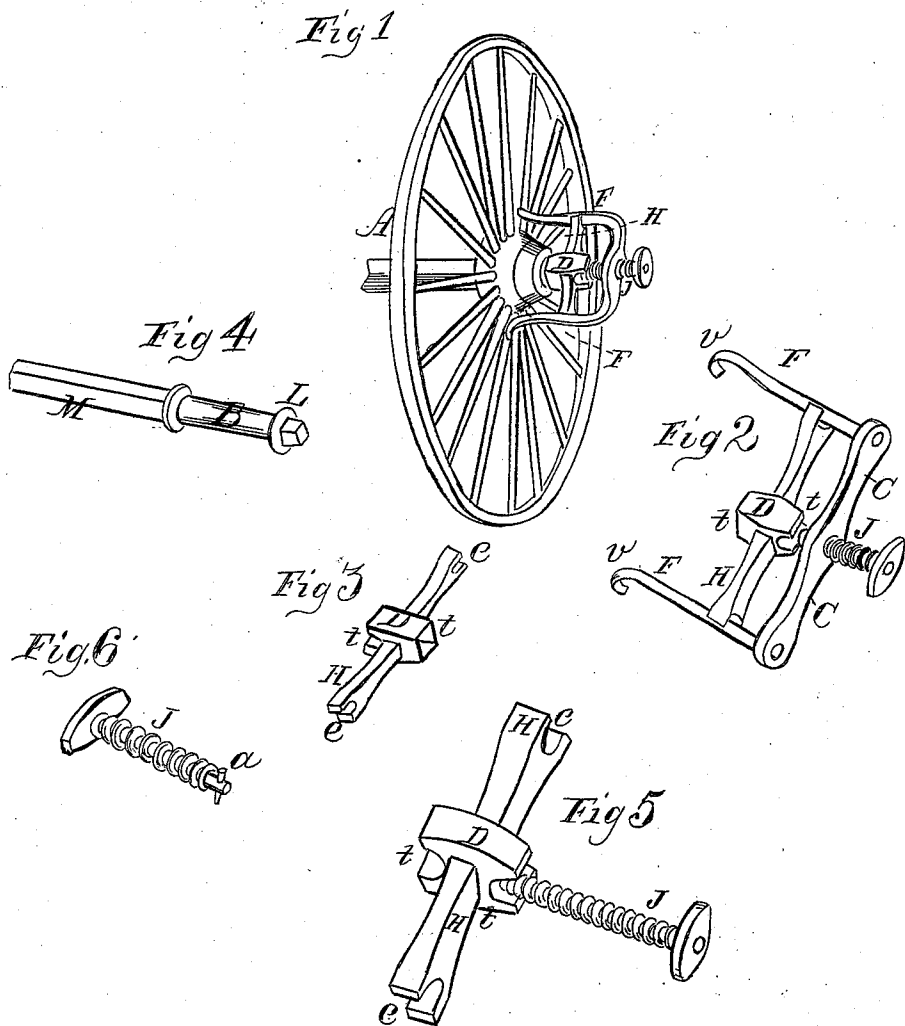


E. T. Ford,
Wrench.

No. 92,438.

Patented July 13, 1869.



Witness
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ELIAS T. FORD, OF STILLWATER, NEW YORK.

Letters Patent No. 92,438, dated July 13, 1869.

IMPROVEMENT IN CARRIAGE-WRENCH.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIAS T. FORD, of the town of Stillwater, county of Saratoga, and State of New York, have invented new and useful Improvements in a Carriage-Wrench, used for handling the axle-nut, as coupled with the wheel of carriages or wagons, by means of this wrench; and I do hereby declare that the following is an exact and full description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, like letters referring to like parts in all of the drawings.

The nature of my invention consists in the construction of a wrench, consisting of a frame, with a movable or adjustable double socket, mounted upon guide-arms, embracing the axle-nut, and operated by a tension-screw, the guide-arms, with hooks placed upon two spokes, and upon either side of the hub, composing the wheel, and so arranged and connected as to couple the axle-nut and hub of carriage or wagon-wheels, holding the same snugly together, while the wheel, with the axle-nut, is turned off and on the axle, for the purpose of lubricating the axle, without coming in contact with the greasy nut, and blackening the hands of the operator.

The wheel acts as its own balance in its rotation, performing its own revolution with axle-nut, when set in motion, while the axle is elevated with a jack, thereby effecting a saving of time and labor over the ordinary hand-method.

Figure 1, in the drawings, represents a perspective view of my invention, when attached to a carriage-wheel.

Figure 2 is a view, in perspective, of my wrench.

Figures 3, 5, and 6, are views of detached portions of the wrench.

Figure 4 represents a portion of the axle, with bearing B and nut L.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Construction.

F F represent the guide-arms, connected to the cross-head C, thus constructed, form the frame of the wrench.

The left extremities of each guide-arm F are flattened, then curved in form of hooks, and covered with soft rubber or leather, upon the inner surface.

Through the orifice made at the centre and through the rear head C, I insert the tension-screw J. A corresponding thread is cut to match the screw J, which is seen in figs. 5 and 6.

The run of the screw J is parallel with the guide-arms F F.

Fig. 5 shows the form of the movable socket D, with cross-bar H, and constructed therewith, and provided with the slots or recesses *e e*, cut with each extremity of the same.

The front end of the tension-screw J is made smaller, and formed with a shoulder next to the thread, and provided with a pin, *a*, as seen in fig. 6.

The smaller portion or journal of the screw J re-

ceives the socket D, an orifice being made within the centre of socket D for the reception of the screw-journal *a*, as the cross-bar H, with double socket D, is located within the frame C F F, and the recesses *e* are adjusted upon the guide-arms F F, as also seen arranged in fig. 2.

The double socket D, with cross-bar H, is secured to the screw J, by means of the pin *a*; at the same time the journal of the screw J is permitted to turn right and left, within the orifice of the socket D.

A nut may be used as a substitute for the pin *a*.

The cavities, *t t*, constituting the double sockets, of section D H, may vary, one to be larger than the other, thereby furnishing two sizes, to suit the different sizes of the axle-nuts, and the section D H may be taken out of the frame C F, and the socket turned over for that purpose.

The nut-cavities, or sockets *t t* are double, as seen in figs. 3 and 5. One end may be closed, (seen in fig. 3,) or both ends may be constructed open at the sides, as seen in fig. 5.

Operation.

I now take the wrench, as seen in fig. 2, and arrange and connect it to the wheel A, by placing the hooks *v v* over two spokes, upon each side of the hub, selecting the two that are upon a line with each other, and centre of the wheel, at the same time adjusting the socket D upon the axle-nut L, by turning the screw J to the right, thereby bringing together the hub B and axle-nut L; a tension or a contraction is produced by the screw J, holding the two snugly together. The wheel A is now set in motion by the operator, by which the nut is turned or run off the thread of the axle. The wheel A, with nut and wrench together, is removed from the axle M, for the purpose of lubrication, after which the wheel is inserted and rotated in the opposite direction. The thread of the nut not having been moved, catches or enters the thread upon the axle, and continues to move itself and wheel A to their proper positions upon the axle M. The wrench is then removed by reversing the screw J, thereby drawing back the socket D with the bar H, moving upon the guide-arms F F, relieving the pressure between the hub and nut, thus producing an easy movement, a saving of time, and without soiling or blackening the hands of the operator.

What I claim, and desire to secure by Letters Patent, is—

1. The socket D, cross-bar H, arms F, and screw J, arranged and operated as described, and for the purpose set forth.

2. The frame, composed of the guide-arms F F, and cross-head C, when used in connection with the double socket D, cross-bar H, and screw J, the whole constructed and operated substantially as described, and for the purpose set forth.

ELIAS T. FORD.

Witnesses:

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