

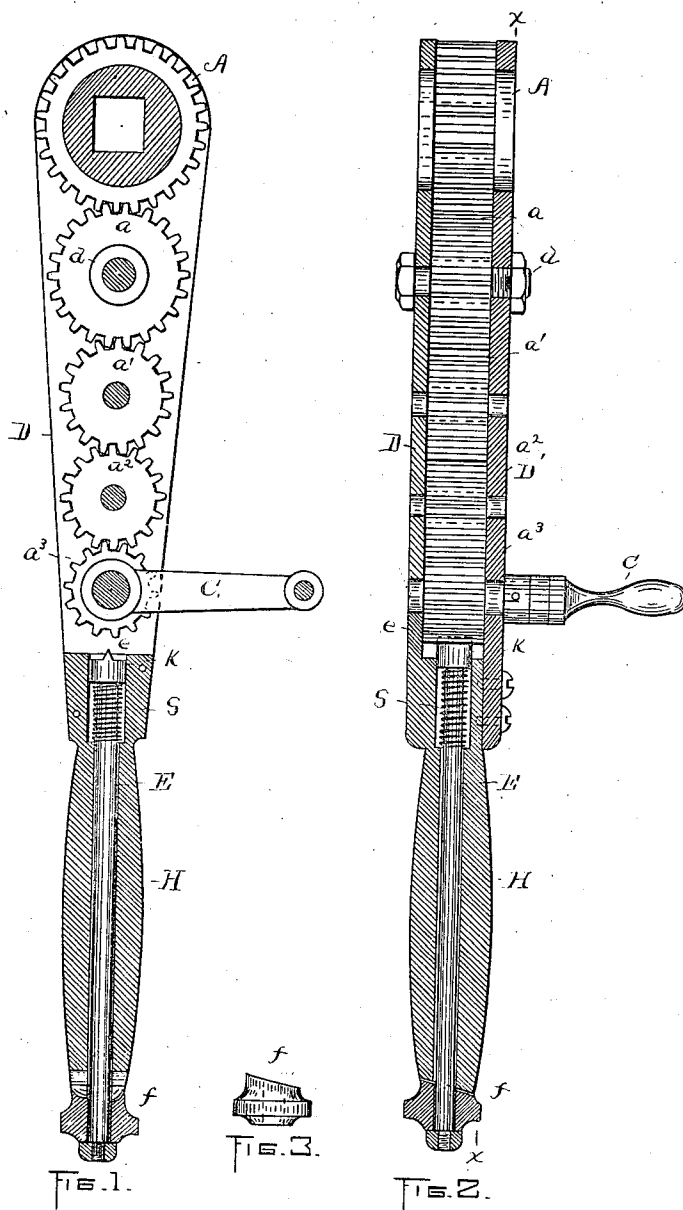
(No Model.)

E. M. HUNGERFORD.

WRENCH.

No. 322,937.

Patented July 28, 1885.



WITNESSES:

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 322,937, dated July 28, 1885.

Application filed January 26, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HUNGERFORD, a resident of the city of Utica, and the county of Oneida, and State of New York, and a citizen of the United States, have invented a new and useful Improvement in Rotary and Stationary Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters and figures marked thereon.

My invention relates to a wrench the head of which is constructed to be rotated by a succession of spur-gears actuated by a crank; also a device for engaging the cogs of one of the gear-wheels for holding the wrench-head stationary with reference to the handle, combined and arranged as hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section view of my improved wrench taken through the line *x x*, Fig. 2, showing the wrench in position to be used as a rotary one. Fig. 2 is a side or edge view of the same, and a longitudinal section view of the handle taken through the center of the same, showing the wrench in position to be used as a stationary wrench. Fig. 3 is a side view of an adjustable thumb-nut for moving the stop.

Having described my invention with reference to the figures marked on the accompanying drawings, I will now proceed to describe the same by reference to the letters marked thereon, in which similar letters of reference refer to corresponding parts throughout the several views.

In the accompanying drawings, A represents the wrench-head, with a central eye in the bearing for engaging the nut or bolt-head. On the periphery of the wrench-head are cog-gears. The wrench-head is mounted and constructed to be rotated by means of other spur-gears, and is journaled in side bars, D D, which fit on either side of the wrench-head. The wrench-eye is preferably formed in the central portion of the bearing of the wrench-head. To rotate the wrench-head for turning the bolt or nut, I provide a

succession of spur-gears, *a a' a² a³*, graduated in size, as indicated in the drawings, and mounted in bearings in side bars, D D. These several spur-gears mesh into each other, and *a* meshes into the cogs on the wrench-head.

It is obvious that the size and number of spur-gears used may be varied without interfering with the usefulness of my invention. To rotate these spur-gears and the wrench-head, I provide crank C, which is rigidly held on the shaft of spur-gear *a³*. By applying power to the crank the spur-gears and wrench-head can be rotated in either direction. Side bars, D D, are held together by bolt *d*, which passes through the same and through the central bearing of gear-wheel *a*. I provide a handle, H, which is formed by union of the side bars back of the spur-gears.

To convert the wrench-head from a rotary to a stationary one, I provide a movable stop, E, which fits into the aperture in the handle, as indicated in the drawings. The stop has a collar, *k*, fastened to the rod, which is beveled at the end to fit into the cog-gear.

e represents the beveled end of the stop. A coiled spring is placed on the stop, one end resting against the collar and the other end against the shoulder in the handle. This spring is provided for automatically moving the beveled end into contact with the cog-gears for holding the wrench-head and gears stationary.

To free the stop from the gears, I provide an inclined thumb-screw, *f*, Fig. 3. This fits onto the screw-threads on the end of the stop. I also provide an inclined shoulder on the handle, as indicated in Fig. 2. By turning the inclined thumb-screw so as to bring the projecting incline onto the raised portion of the handle a backward motion is given to the stop, which frees the same from the gear, thereby allowing the wrench to be used as a rotary one.

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

1. The combination, in a rotary wrench having side bars and handles, with a succession of spur-gears between the side bars operated by a crank, as described, of the circular

wrench-head, with the eye in the central bearing of the wrench-head journaled between the side bars, substantially as described.

- 5 2. The combination, with a rotary wrench-head constructed and mounted to be rotated in either direction through a succession of spur-gears moved by crank, substantially as described, of a movable stop for engaging the

cogs, whereby the wrench-heads and connecting-gear may be held stationary.
Signed at Utica, N. Y.

EDWARD M. HUNGERFORD.

Witnesses:

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