

(Model.)

G. W. KAUFMAN.
Wrench.

No. 237,190.

Patented Feb. 1, 1881.

Fig. 1.

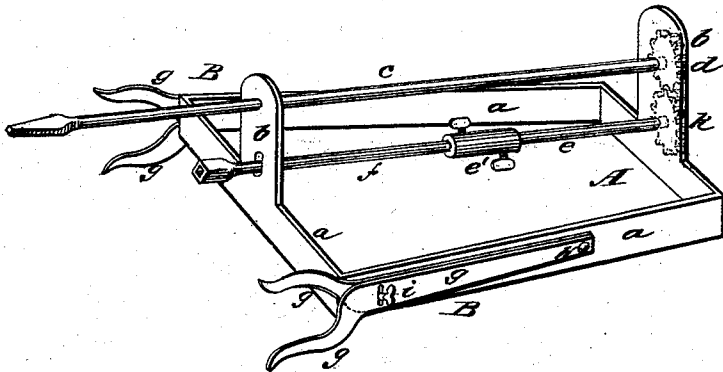
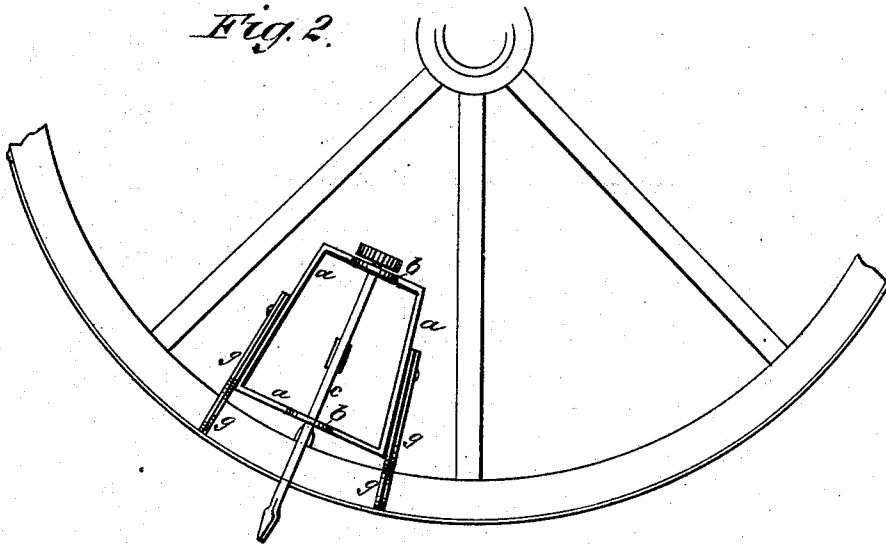


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE W. KAUFMAN, OF LONDON, OHIO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 237,190, dated February 1, 1881.

Application filed July 6, 1880. (Model.)

To all whom it may concern:

Be it known that I, GEORGE W. KAUFMAN, of London, in the county of Madison and State of Ohio, have invented a new and Improved Wrench, of which the following is a specification.

My improved wrench is designed for use in screwing on or off the nuts of bolts in carriage-wheels.

The object of my invention is to furnish a wrench that may be conveniently and effectively used for said purpose; and the invention consists in a frame carrying a socketed shaft for receiving the wrench-head, and a second shaft that is formed to receive a brace or crank, the shafts being connected by gearing and the frame fitted with clamps for its attachment to the wheel.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of my improved wrench, and Fig. 2 shows a wheel with the wrench secured thereon.

Similar letters of reference indicate corresponding parts.

A is an oblong frame of bars *a*, the end bars of which are formed with standards *b*.

c is a shaft having bearings in the standards *b*, carrying at one end a small cog-wheel, *d*, and formed at the opposite end for entering the socket of an ordinary brace, or for receiving a crank-handle.

e is a shaft having a bearing in one standard *b*, and carrying a cog-wheel, *k*, that engages with wheel *d*. Upon the other end of shaft *e* is attached a tubular socket, *e'*, that is adapted for receiving the end of the wrench proper, (shown at *f*), which extends through the other post or standard *b*. The socket *e'* is provided with a set-screw for clamping the wrench, so that when the latter is in place it forms a rigid continuation of shaft *e*.

Upon the opposite sides of frame A are fitted the clamps B B. These each consist of two bars, *g g*, pivoted together at their inner ends and to the side bars, *a*, by a pin or rivet, *h*, and connected near their outer ends to the

bar *a* by a thumb-screw, *i*, that passes through slots in bars *g*, so that they may be opened and closed more or less and clamped by the screw. The outer ends of these bars *g* are bent outward in the portion projecting beyond frame A, so as to receive the felly of the wheel between them.

It is to be understood that the frame A is to be of a size for passing readily between the spokes of the wheel, and it will be attached to the inside of the wheel by tightening the clamp B upon the felly, and in such position that the socket of the wrench *f* sets upon the nut that is to be loosened or tightened. The aperture in standard *b* for the wrench is elongated, so that if the bolt is not central of the felly the wrench may be sprung upon the nut. In this position the end of shaft *c* projects at the outside of the wheel, and may be turned to turn the wrench by applying the brace or crank-handle. This construction permits the application of the necessary power required for starting the nuts or screwing them tightly to place, and the wrench, being removable, may be changed according to the size required.

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

1. The wrench consisting of the operating-shaft *c*, shaft *e*, having socket *e'*, for receiving the wrench proper, and the cog-wheels *d k*, combined with the supporting-frame A and clamps B B, substantially as shown and described.

2. The clamps consisting of pivoted bars *g*, provided with set-screws *i*, combined with the frame A of the wrench, substantially as and for the purposes set forth.

3. The wrench *f*, combined with the revolving shaft *e*, having socket *e'*, and frame A, having slotted standard *b*, substantially as described, whereby the wrench is rendered adjustable and interchangeable, as specified.

GEORGE WILLIAM KAUFMAN,

Witnesses:

HENRY KAUFMAN,
ALFRED WILLETT.