(No Model.)

J. S. LANG.

WRENCH.

No. 384,451. Patented June 12, 1888.

Fig. 1.

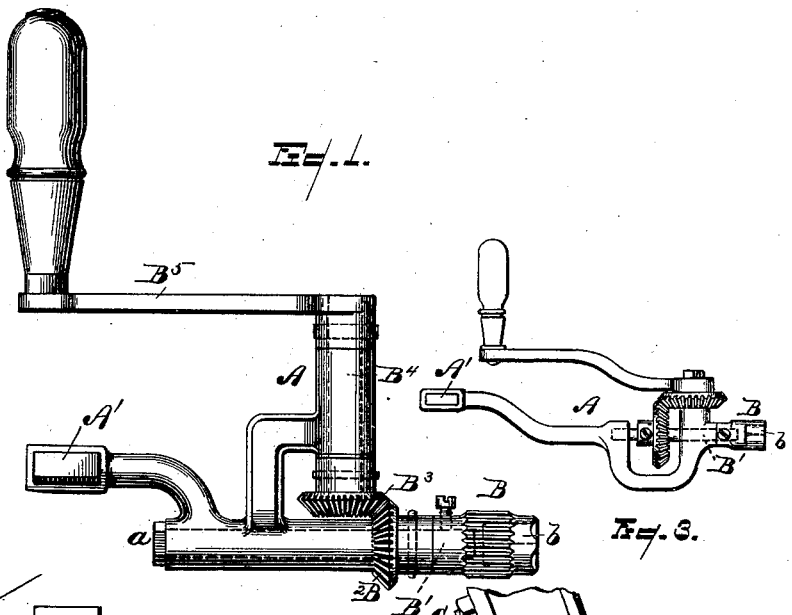
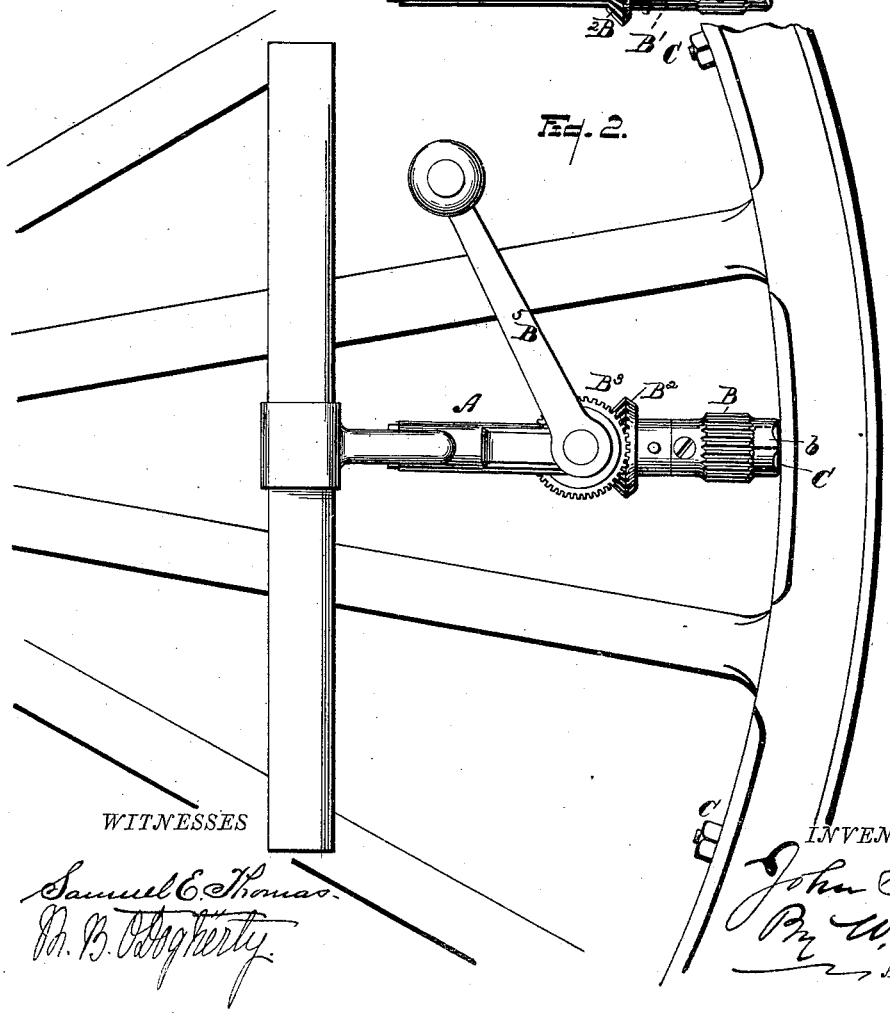


Fig. 3.

Fig. 2.



WITNESSES

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JOHN S. LANG, OF YPSILANTI, MICHIGAN, ASSIGNOR OF ONE-HALF TO ALVA WORDEN, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 384,451, dated June 12, 1888.

Application filed April 5, 1888. Serial No. 269,688. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. LANG, a citizen of the United States, residing at Ypsilanti, county of Washtenau, State of Michigan, have invented a certain new and useful Improvement in Tire-Bolt Wrenches; and I declare the following to be a full, clear, and exact description of the same, 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, which form a part of this specification.

In the drawings, Figure 1 is a view of my tire-bolt wrench. Fig. 2 shows the same in use upon a wheel. Fig. 3 shows a variation in the form of the frame.

It is the purpose of my invention to produce a convenient wrench for the purpose of running the nuts onto or off from tire-bolts.

To this end, A represents a suitable framework for the wrench.

B is the wrench proper, provided with a cavity, *b*, adapted to embrace the nuts C of the tire-bolts.

The wrench B is preferably formed in the nature of a sleeve adapted to slip upon the end of the shaft B′, and be held in place by a set-screw, as shown. This enables me to change the wrench-head at pleasure, and so adapt the instrument by the employment of wrench-heads of various sizes to suit all the different sizes of tire-bolts and nuts.

B^2 is a bevel-gear engaged with a driving-gear, B^3, on the shaft B^4, and a crank, B^5, is provided with which to operate the device.

A′ is a cross-arm, which, for carriage-wrenches, may be provided with a lining of rubber, leather, or other cushion to prevent damage to the paint or finish of the wheel.

The cross-arm A′ is designed to rest upon the spokes to steady the tool and to permit it to project down between the spokes in proper place to engage the nuts.

a represents a nut or any other suitable device for holding the frame A and shaft B′ in proper relation with each other.

The cross-arm A′ is arranged in a plane at right angles to the crank-shaft, so as to permit the crank to project out beyond the plane of the spokes, and yet to operate in a plane parallel with the plane of the spokes.

The frame A may be considerably varied without departing from my invention. Thus, for instance, as shown in Fig. 3, the frame is so shaped as to do away with the nut or fastening *a*.

It is apparent that with this device the operator may put his wrench on the nut and the cross-bar A′ against the spokes. He may then bear strongly with it against the spokes, and so hold the tool steadily to its work while he turns the crank.

What I claim is—

1. A tire-bolt wrench consisting of a shaft provided with a wrench-head at its end, and in connection therewith gear-wheels and a crank, whereby said wrench may be operated, and a cross-arm adapted to rest upon the spokes of the wheel, substantially as and for the purpose described.

2. A tire-bolt wrench consisting of the combination, with the wrench, its shaft, and connecting-gears, of a cross-arm arranged in a plane above the level of the wrench-shaft, and adapted when resting upon the spokes to properly locate and support the wrench in position for its work, substantially as described.

3. The tire-bolt wrench consisting of a frame provided with shafts B′ and B^4, engaged by gears, a crank, B^5, a cross-bar, A′, and a removable wrench-head, B, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN S. LANG.

Witnesses:

M. B. O'DOGHERTY,

SAMUEL E. THOMAS.