(No Model.)

B. F. LANCASTER.

CARRIAGE WRENCH.

No. 267,228. Patented Nov. 7, 1882.

Fig. 3.

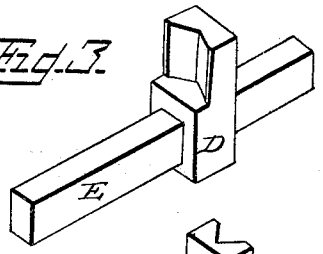


Fig. 4.

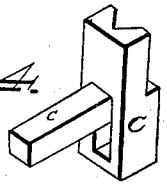


Fig. 1.

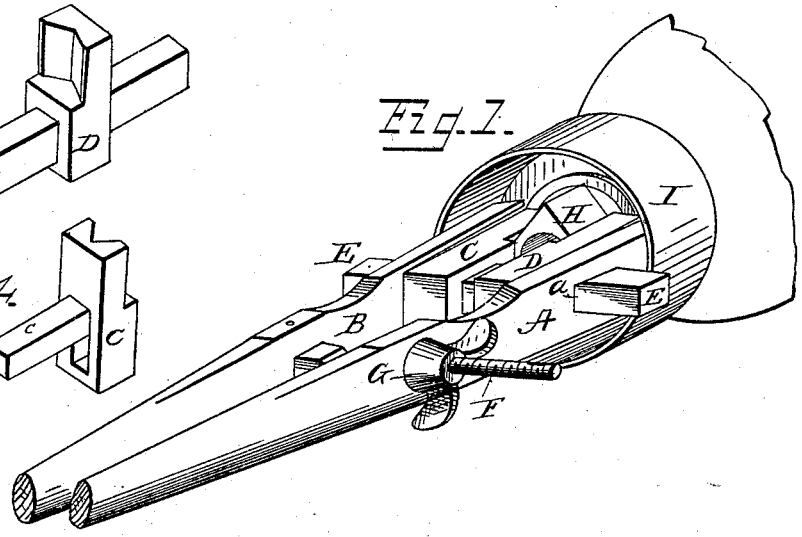


Fig. 2.

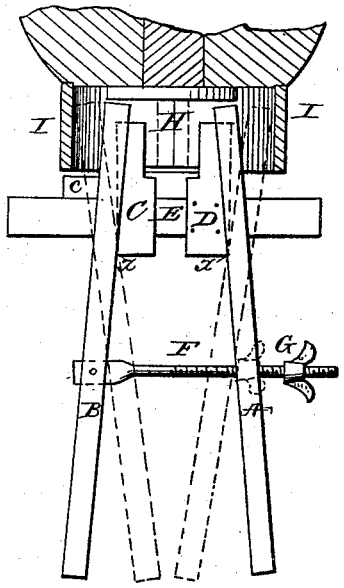


Fig. 5.

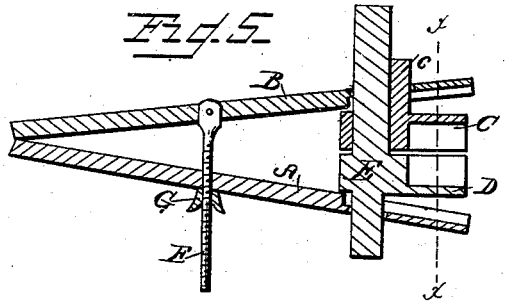
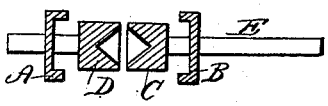


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

BRADFORD F. LANCASTER, OF AUGUSTA, MAINE, ASSIGNOR OF ONE-HALF TO RICHARD W. BLACK, OF SAME PLACE.

CARRIAGE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 267,228, dated November 7, 1882.

Application filed August 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, BRADFORD F. LANCASTER, a citizen of the United States, residing at Augusta, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Carriage-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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of my invention relates to that class of wrenches known as "carriage-wrenches," and is designed for removing the nut from the axle of carriages in process of oiling, &c.

My invention consists of a wrench which, when placed in position on the nut, is secured to it and to the rim of the hub by means of an outward-acting clamp, this clamp being held in place by a thumb-screw. By the use of my wrench the nut may be removed by simply turning the wheel, and held in place while the wheel is off.

The following is a detailed description of my invention:

In the drawings, Figure 1 is a perspective view of the wrench in position, holding the nut and clamped to the rim of the wheel. Fig. 2 is a side view of wrench, showing how it is applied to the wheel. Figs. 3 and 4 are details. Fig. 5 is a longitudinal section. Fig. 6 is a section on line *x x*, Fig. 5.

A and B are two arms, one end of each being finished to act as a handle to the wrench, and the other ends being used as a clamp. The arm A at point *a* is pierced by a slot large enough to admit the bar E loosely. The slot *a* is placed far enough from the end of arm A so that it will clear the end of the rim of the wheel I when the wrench is in position.

On the inside face of the arm A is a recess cut in to about half the thickness of A, which recess just admits the jaw D. Arms A and B are just alike, except as hereinafter shown, and the recesses in the arms face each other, one fitting over jaw C and the other over jaw D.

Between A and B are two jaws, C and D, whose inside faces are formed to clasp the sharp edges of the nut H. Bar E passes through slots in arms A and B and jaws C and D. It passes through A loosely, is attached firmly to jaw D, passes through jaw C easily, but not loosely, and through arm B loosely. The jaw C has an arm, *c*, which slides along on top of bar E and through arm B. Its purpose is to keep jaw C at right angles to bar E, and so parallel to jaw D.

Into the handle of arm B is pivoted the rod F, which passes loosely through a hole in arm A. Upon this bar is cut a thread, upon which works a thumb-screw, G.

When the wrench is to used, spread the handle ends of A and B apart, the screw G being out, and bring the other ends close down over the jaws C and D. The ends of A and B thus approach each other, so that they can be thrust into any hub. Spread the jaws apart by sliding C, held close against B, back on rod E, and clasp the jaws on the nut H, as in Fig. 2. Then bring the handle ends of A and B together, as shown by dotted line, Fig. 2, until ends of A and B impinge against the inner surface of the rim I of the hub. Screw up screw G against A tightly.

It will be seen that the arms A and B act as two levers, their ends acting outward against the rim of the hub, and the points *x x* bearing against the jaws C D and forcing them together.

Having attached the wrench, the wheel is unscrewed, which brings the nut off with it, holding it fast while the nut is off. The nut is screwed on by reversing the motion.

It has been found by actual trial that the device here shown is easily and quickly applied to a great variety of wheels.

The inside of jaws C and D may be formed as desired.

I claim—

In a carriage-wrench, to be clamped to the hub, the combination of the arms A and B, the jaws C and D, the bar E, and screw F and nut G, substantially as shown and set forth.

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

BRADFORD F. LANCASTER.

Witnesses:
J. L. COLCORD,
S. LANCASTER.