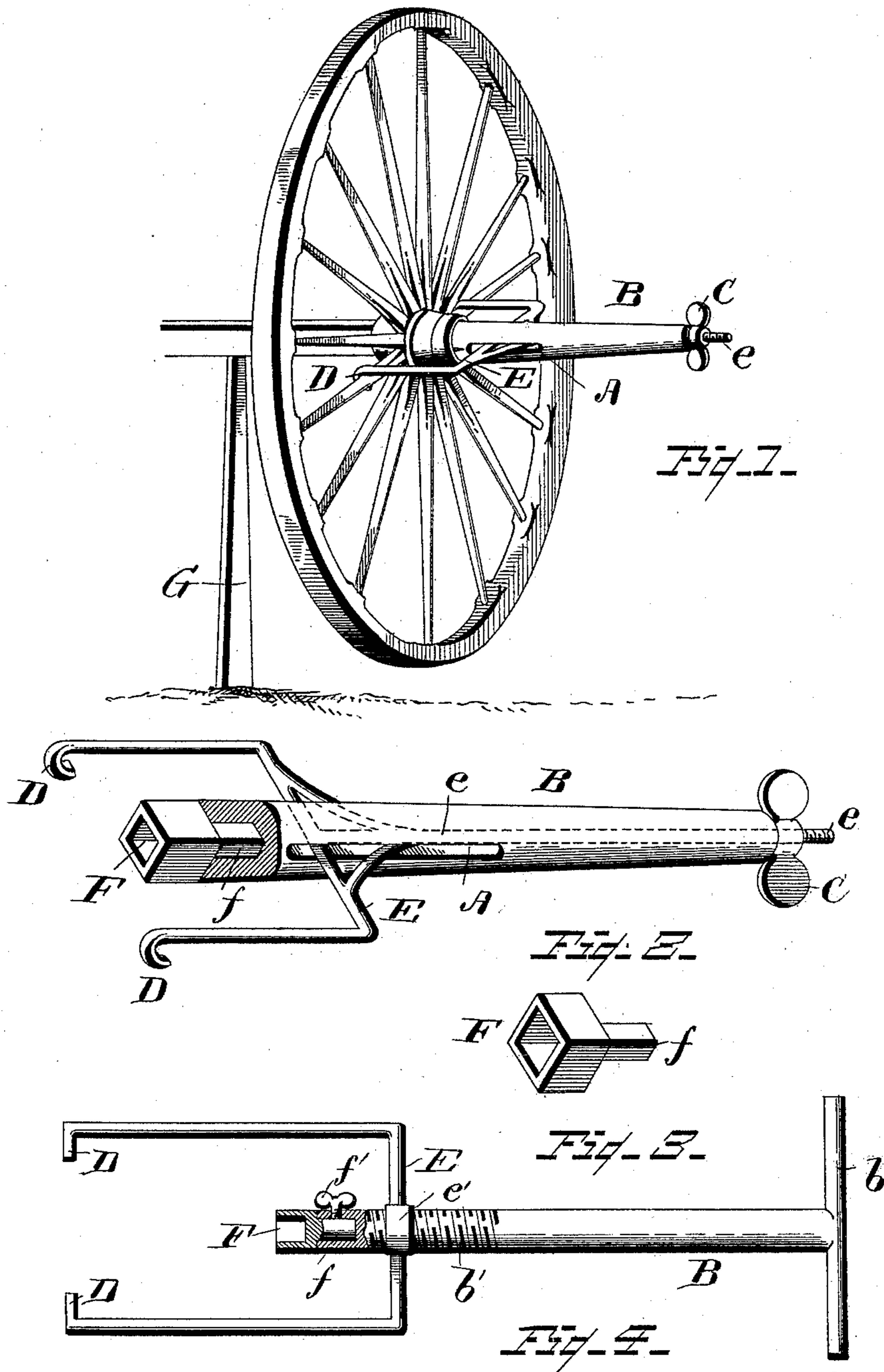


(No Model.)

S. L. BLIGH.  
AXLE NUT WRENCH.

No. 463,028.

Patented Nov. 10, 1891.



Witnesses

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# UNITED STATES PATENT OFFICE.

SAMUEL L. BLIGH, OF CUSTARD'S, PENNSYLVANIA.

## AXLE-NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 463,028, dated November 10, 1891.

Application filed July 21, 1891. Serial No. 400,224. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL L. BLIGH, a citizen of the United States, residing at Custard's, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Axle-Nut 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.

This invention relates to wheel-axle-nut wrench and aims to provide a wrench which is adapted to turn on and off the axle-nut of different classes and sizes of vehicles and which can be firmly secured to the axle-nut and wheel and used as a handle to lift the wheel from the ground when propping up the axle.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a perspective view of the wrench, showing a nut-socket detachably connected therewith, parts being broken away. Fig. 3 is a detail view of an interchangeable and detachable nut-socket. Fig. 4 is a modification.

The wrench is composed, essentially, of two parts, the stock B, having a socket in one end to receive the axle-nut and having a central bore, and the clamp, which is composed of the cross-head E, the hooks D D, projected from the ends of the cross-head, the stem e, and means, as the thumb-nut C, for moving the stem longitudinally of the stock to cause the hooks D D to bind on the spokes of the wheel. The stock is provided with slot A, which extends through from side to side. In assembling the parts, the cross-head E extends through the slot A, the stem e through the bore of the stock, the hooks D D one on each side of the stock, and the thumb-nut C on the threaded end of the stem which pro-

jects beyond the stock. The socket in the end of the stock to receive the axle-nut being rigid, it is adapted for one size of nut only.

To adapt the wrench for different sizes of axle-nuts, interchangeable sockets F of different sizes are provided and are fitted in the socket in the stock, preferably by means of shanks f, which are inserted in the said socket of the stock.

To use the wrench the socketed end of the stock is fitted on the axle-nut of the wheel M and the hooks D D are adjusted to engage with diametrically-opposite spokes. The thumb-nut is turned until the hooks D D bind firmly on the said spokes and hold the stock firmly on the axle-nut. The wrench being firmly held to the wheel, the stock is grasped and lifted, thereby elevating the wheel from the ground a sufficient distance to permit the prop G to be placed under the axle. On turning the wheel the axle-nut will be moved. After the spindle is lubricated the wheel is replaced and turned in the opposite direction, thereby screwing the nut on the axle, and the stock is again lifted to release the prop G, which is removed and the wrench detached by loosening the nut C. When lifting on the stock, care should be taken to have the two hooks D D about in the same vertical line, as in this position the wrench is subjected to a minimum amount of strain during the application of the lifting force.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The hereinbefore-specified axle-nut wrench, comprising a stock which is of sufficient length to form a handle and having an axle-nut socket at its inner end, a cross-head constructed to move on the stock and having hooks projected from its ends, which hooks are adapted to engage with the wheel, and means for positively moving the said cross-head on the stock, substantially as and for the purpose described.

2. The hereinbefore shown and described axle-nut wrench, comprising a tubular stock,

which is of sufficient length to form a handle and having coincident slots in its sides and having an axle-nut socket in its inner end, a cross-head extending through the slots in the  
5 said stock and having hooks at its ends to engage with the stock and connected at its inner end with the said cross-head and having its outer end projected beyond the stock and threaded, and a thumb-nut mounted on

the threaded end of the said stem, substantially as and for the purpose described.

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

SAMUEL L. BLIGH.

Witnesses:

J. H. CULBERTSON,  
E. L. MCKELREY.