(No Model.)

J. SHAFER.

WRENCH.

No. 561,823. Patented June 9, 1896.

Fig. 1.

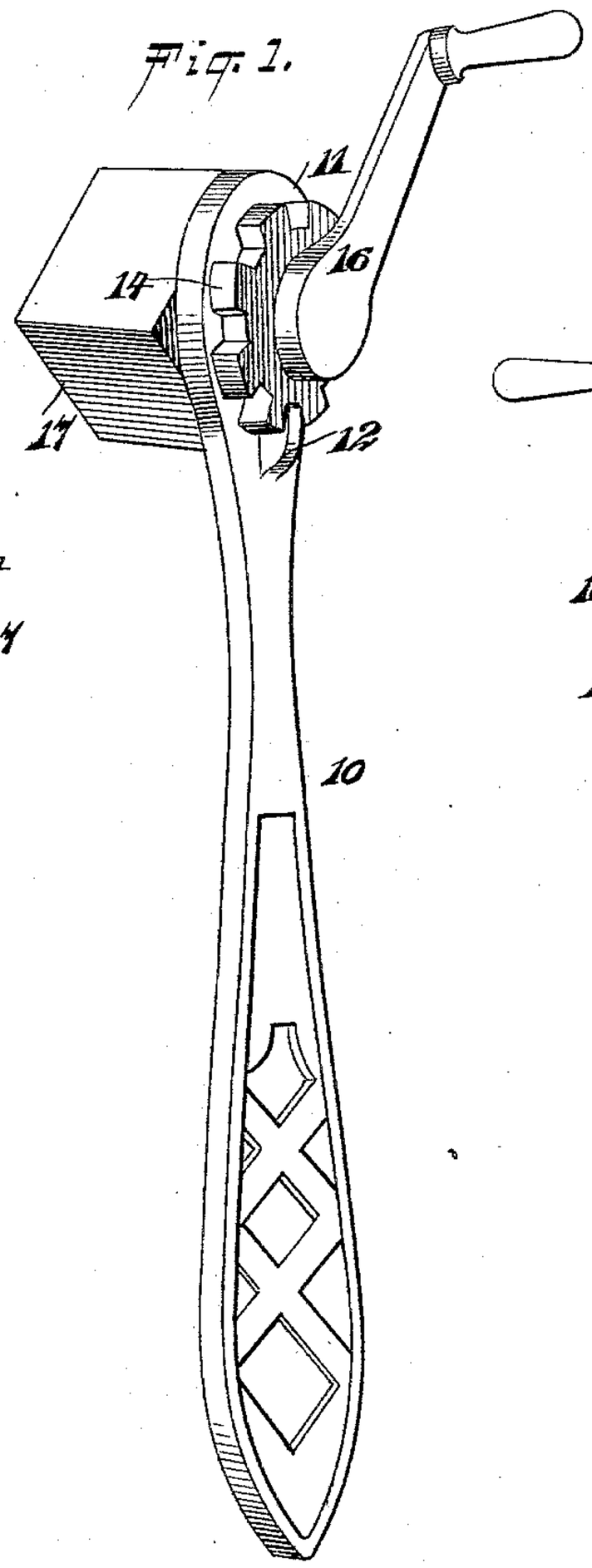


Fig. 2.

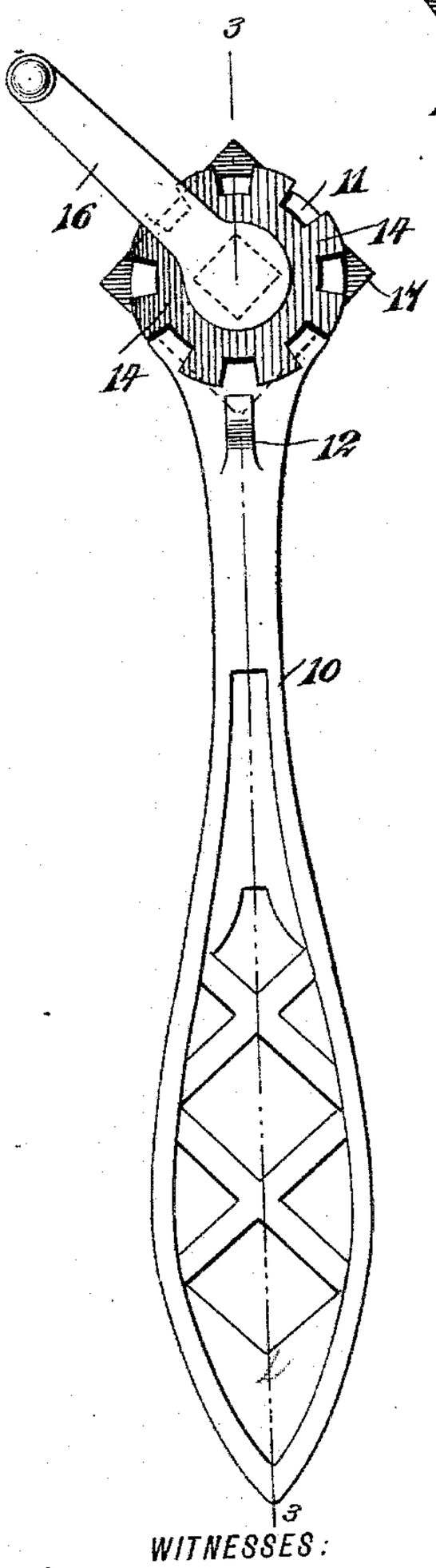


Fig. 3.

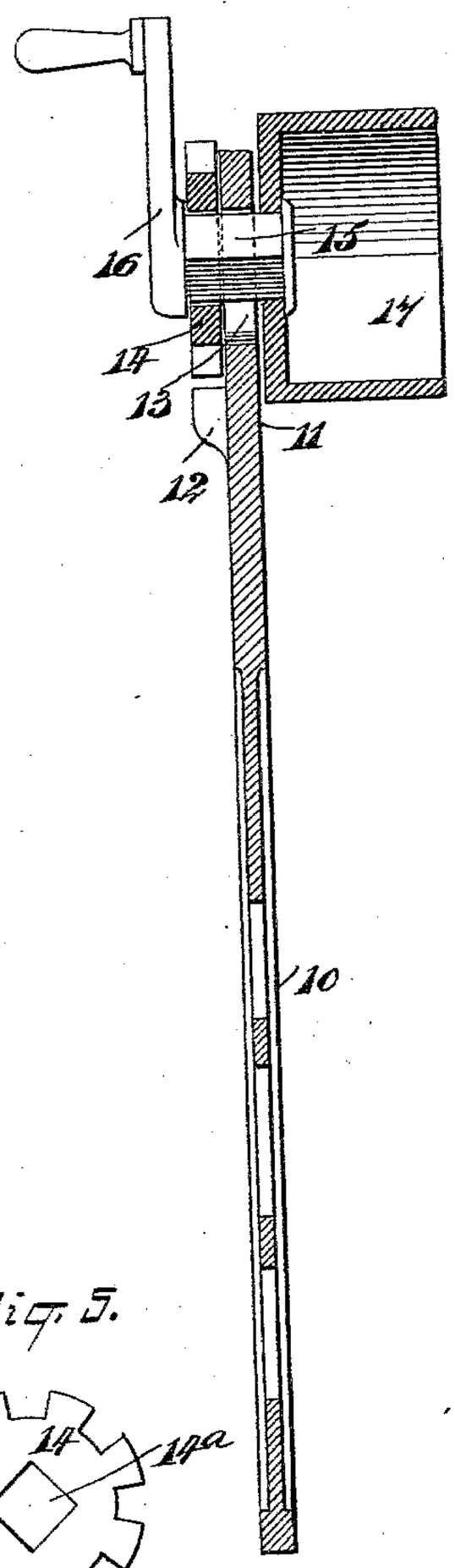


Fig. 4.

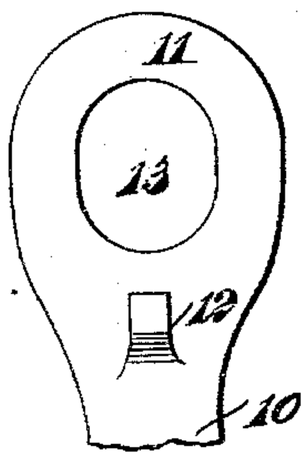
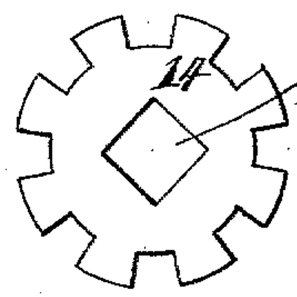


Fig. 5.



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JOSEPH SHAFER, OF SAN BERNARDINO, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 561,823, dated June 9, 1896.

Application filed February 7, 1896. Serial No. 578,341. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SHAFER, of San Bernardino, in the county of San Bernardino and State of California, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wrenches, especially in wrenches adapted for use in connection with vehicle-wheels or adapted for substantially the same use as a monkey-wrench.

The object to the invention is to construct a wrench especially adapted for removing nuts from vehicle-axles in such manner that the nut need not at that time be grasped by the hand, thus preventing the fingers of the hand from becoming soiled.

Another object of the invention is to provide a wrench through the medium of which a nut may be quickly and conveniently removed from or placed upon the vehicle-axle and whereby the wrench will be capable of starting the nut no matter how fast it may be secured, and to screw the same securely to a bearing.

A further object of the invention is to provide a wrench whereby after the nut has been loosened it may be expeditiously and conveniently removed from the axle, or wherever it may be placed, without swinging or moving the body of the handle of the wrench.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved wrench. Fig. 2 is a plan view thereof. Fig. 3 is a section taken substantially on the line 3 3 of Fig. 2. Fig. 4 is a plan view of the head portion of the handle, and Fig. 5 is a plan view of a toothed wheel adapted to revolve on the said handle-head.

In carrying out the invention the body of the wrench consists of a handle 10, terminating at one end in a flat head 11 and provided upon its upper face with a lug 12, arranged adjacent to a preferably elongated opening 13, made in the head of the said handle, as shown in Fig. 4. A toothed wheel 14 is adapted to turn upon the upper face of the head of the handle, and the shank 15 of a crank 16 is so fitted in the wheel 14 that the said wheel will turn with the shank portion of the crank, which is adapted to be carried through and to turn loosely in the opening 13 of the head. The shank of the crank 16 is of such size that the wheel 14 may be carried free from the lug 12, so that the said wheel may be revolved, or whereby the wheel may be made to engage with the said lug, receiving it between adjacent cogs, as shown in Fig. 1.

Usually the shank of the crank 16 is made polygonal, and an opening 14^a is made in the toothed wheel 14 of corresponding contour. What may be termed the "bottom end" of the shank 15 is securely fastened to the closed end of a casing 17, the said casing being adapted to receive the nut to be removed.

In operation in starting the nut or in giving the nut its seating turn the handle is carried in direction of the toothed wheel, bringing the tooth or lug 12 of the handle into one of the recesses in the wheel, as shown in Fig. 1, and at this time the crank 16 is preferably brought over or substantially in alinement with the handle, and owing to the engagement of the lug 12 of the handle and the toothed wheel 14 these parts are rendered virtually integral, and the casing 17 is securely held upon the handle, being forced to turn therewith. The wrench is now used in the ordinary way. After the nut has been started the lug on the handle is carried out of engagement with the toothed wheel, as shown in Fig. 2. The casing may now be revolved through the medium of the crank 16, and it is evident that at no time will there be any need of the nut being manipulated by the fingers of the hand.

When the nut has been turned off, it will not fall to the ground, nor will the wrench, and drop together, as is sometimes the case with other wrenches. Since the operator has a firm hold of the main handle with one hand and turns the nut with the other, there is no chance for the nut to drop out of the wrench or the wrench to fall from the hand.

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

1. The combination of a handle having a longitudinally-slotted head and a projection adjacent thereto, a bolt extending through said slot and capable of sliding and turning therein, a casing made in the shape of an open polygonal box whereby it is adapted to engage a nut, said casing being secured to the bolt on one side of the handle, a locking-wheel secured to the bolt on the opposite side of the handle and adapted to engage the lug thereon, and means for turning the casing and the wheel, substantially as described.

2. The combination of a handle provided with a longitudinally-slotted head, and a projection adjacent thereto, an angular bolt extending through said slot and capable of turning and sliding therein, a casing secured to one end of the bolt exteriorly of said handle and provided with a polygonal recess adapted to engage a nut, a locking-wheel likewise secured to the said angular bolt but on the opposite side of the handle and adapted to engage the projection of the handle, and a crank secured to the bolt exteriorly of the said locking-wheel, substantially as described.

JOSEPH SHAFER.

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