

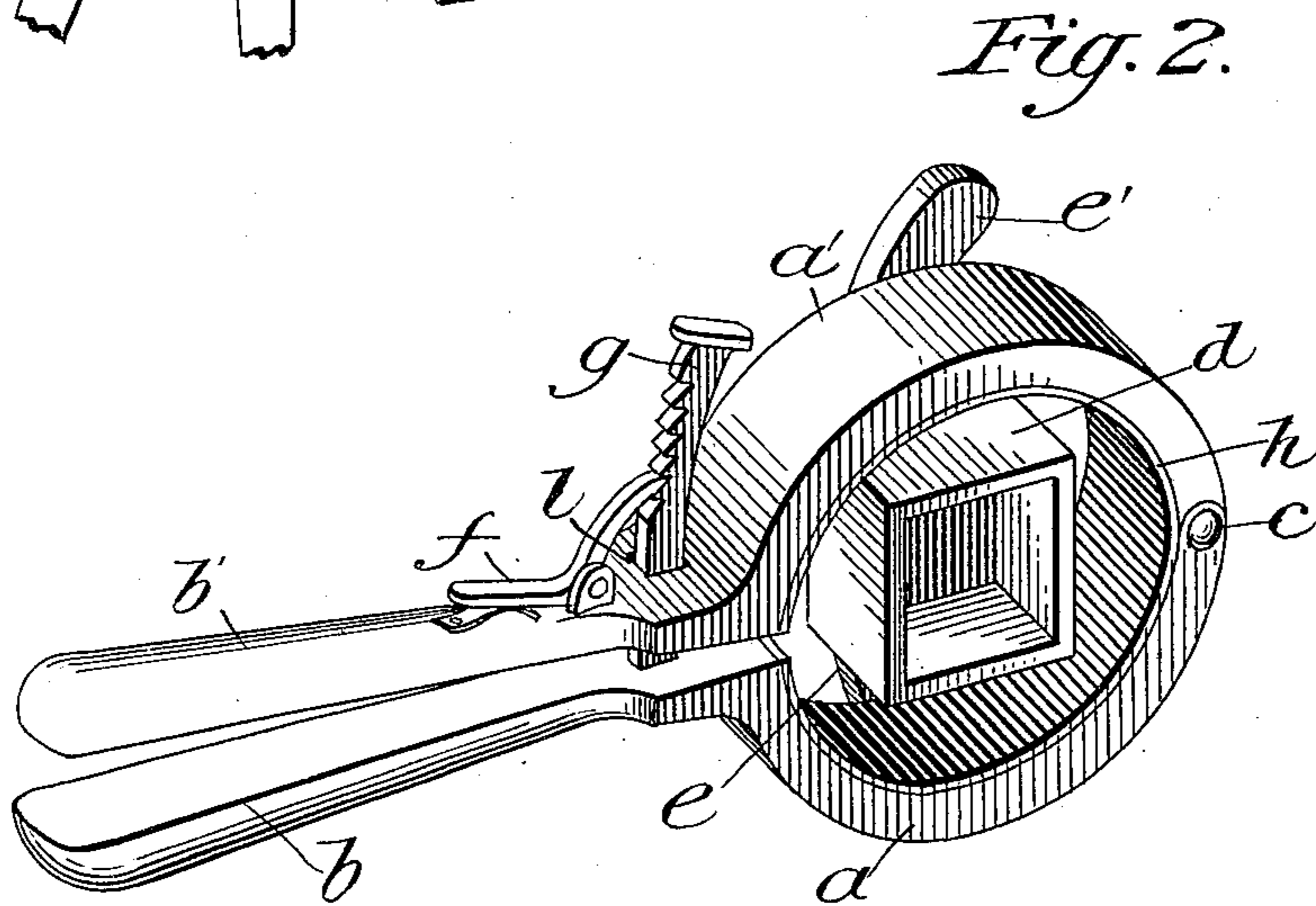
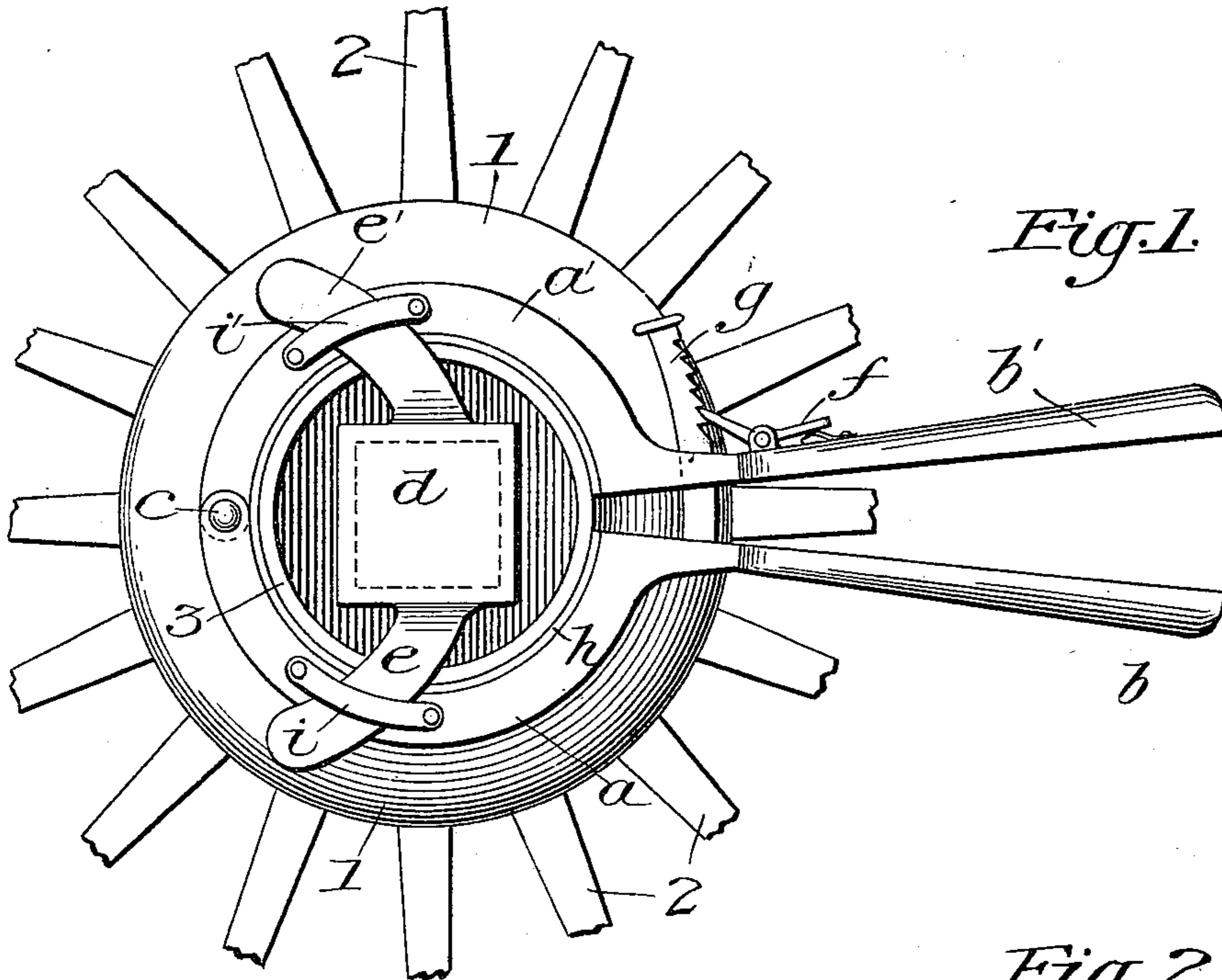
No. 654,240

Patented July 24, 1900.

D. J. ESTES.
WHEEL AND AXLE NUT WRENCH.

(Application filed Apr. 3, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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WHEEL AND AXLE-NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 654,240, dated July 24, 1900.

Application filed April 3, 1900. Serial No. 11,407. (No model.)

To all whom it may concern:

Be it known that I, DELBERT J. ESTES, a citizen of the United States, residing at Opdyke, in the county of Jefferson and State of Illinois, have invented certain new and useful Improvements in Wheel and 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.

The object of the invention is to provide a device whereby a vehicle-wheel and its axle-nut may be removed from the axle together, and also whereby when removed they may be retained in such relation as to be easily and quickly restored to place on the axle without requiring the nut to be handled or separated from the wheel.

The invention is illustrated in the accompanying drawings, forming part of this specification, wherein—

Figure 1 represents in elevation a wheel-hub with fragments of its spokes and my wheel and axle-nut wrench in position, and Fig. 2 represents the wrench in perspective looking from the side opposite to that seen in Fig. 1.

Referring to the views, 1 denotes the hub of an ordinary vehicle-wheel, 2 indicates the spokes, and 3 the usual hub-band, which incloses the axle-nut.

The wrench consists of two jaws $a a'$, pivoted together at c and curved to conform to the general outline of the hub-band. At their opposite ends from the pivot c the jaws are provided, respectively, with handles $b b'$, whereby they may be opened and closed, and the handle b has a curved bar g rising from it and passing through a slot l in the handle b' . The outer edge of the bar g is toothed, as shown in the drawings, and a spring-pawl f is mounted on the handle b' in such relation to the slot l that the free end of the pawl engages the teeth on the bar g . This rack-bar and pawl constitute a releasable locking device whereby the jaws $a a'$ of the wrench may be clamped upon and around the hub-band.

The letter d denotes a rectangular socket 50 having a closed outer end and open at the in-

ner end. This socket is adapted to receive the axle-nut when the jaws are clamped upon the hub, and arms $e e'$ project from opposite sides of the socket and have a sliding engagement with the jaws $a a'$, respectively, through the intermediacy of keepers $i i'$, secured to the outer sides of the jaws. The arms $e e'$ are curved to conform approximately to the arc described by the keepers as the jaws are opened and closed, and the rack-bar g is also curved for a similar purpose. The inner sides of the jaws $a a'$ are preferably lined with rubber h or other soft material to prevent scratching the hub-band.

Fig. 1 of the drawings sufficiently illustrates the manner of applying and using the device to obviate the necessity for further description; but it may be stated that when the jaws are clamped around the hub the axle-nut will fit within the socket, and the socket being rigid with the jaws the nut is thereby locked to the hub, and may be removed by rotating the wheel backwardly. If desired, however, the nut may be removed without taking off the wheel and without rotating the wheel, this being effected by slipping the jaws over the hub-band until the axle-nut is inclosed by the socket, when by simply turning the wrench backwardly without clamping the jaws upon the hub-band the nut may be readily unscrewed by turning the wrench.

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

1. The combination of the jaws a, a' , for clamping the wheel-hub, pivoted together at c , and provided with the handles b, b' , respectively, and the socket d for receiving the axle-nut, the socket having the arms e, e' , slidably connected with the jaws.

2. The combination of the jaws, a, a' , for clamping the wheel-hub, pivoted together at c , and provided with the handles b, b' , respectively, and a releasable locking device, the socket d for receiving the nut, the socket having the arms e, e' , and the keepers i, i' , on the jaws through which the arms of the socket are free to slide.

3. The combination of the curved jaws, a, a' , for clamping at c , and provided with the 100

handles *b*, *b'*, respectively, a releasable locking device consisting of the notched bar *g*, on the handle *b* and the spring-latch *f* on the handle *b'*, the socket *d* for receiving the axle-
5 nut, said socket having the curved arms *e*, *e'*, and the keepers *i*, *i'*, on the jaws through which the arms of the socket slide.

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

DELBERT J. ESTES.

Witnesses:

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