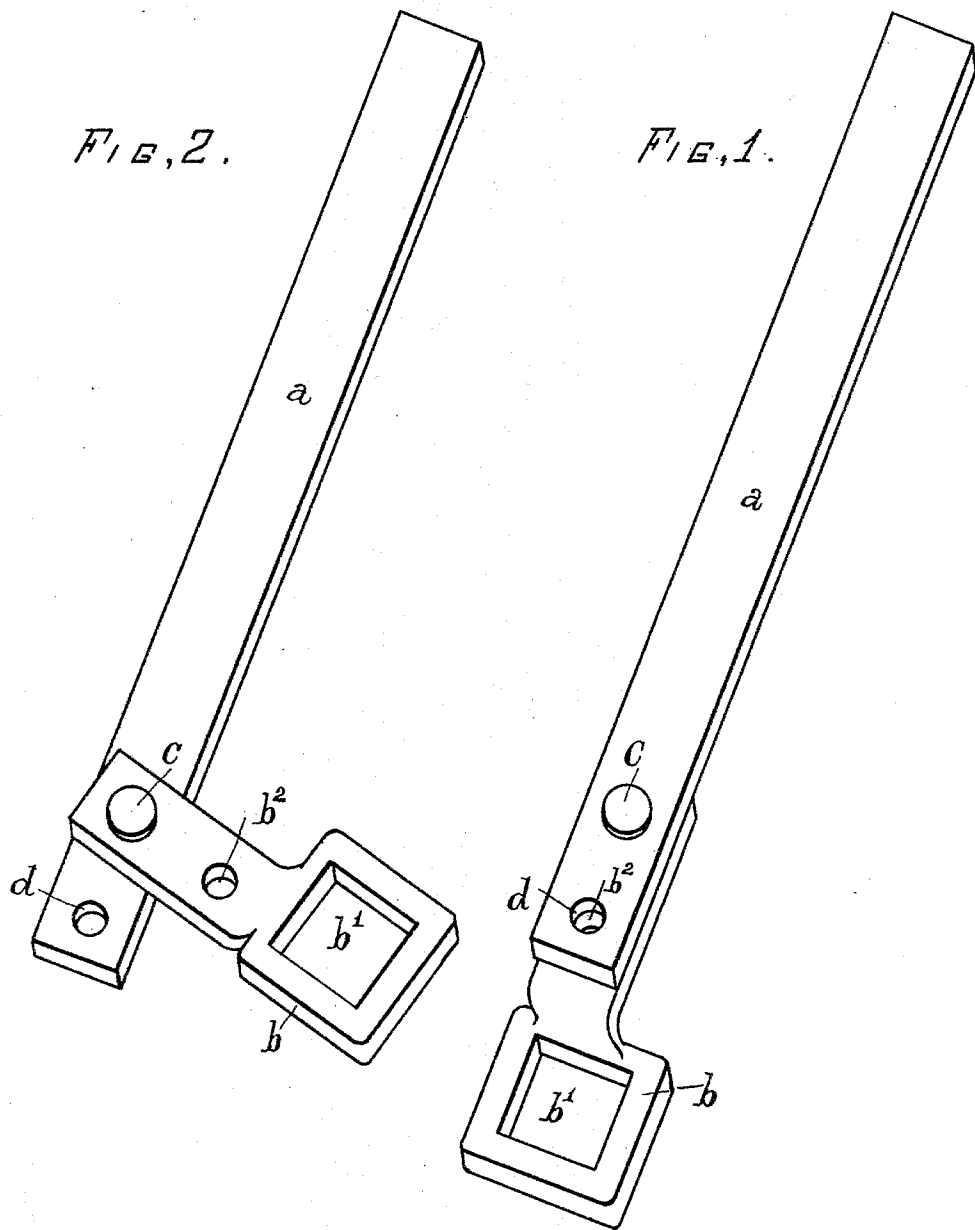


(No Model.)

J. S. HOUSE.
VEHICLE WRENCH.

No. 583,901.

Patented June 8, 1897.



WITNESSES.

James Brewer.
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UNITED STATES PATENT OFFICE.

JOHN S. HOUSE, OF SPRINGFIELD, ILLINOIS.

VEHICLE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 583,901, dated June 8, 1897.

Application filed August 27, 1896. Serial No. 604,127. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. HOUSE, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Vehicle-Wrenches, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use my said invention.

My invention relates to that class of wrenches commonly called "socket-wrenches," and which are used to put on or to detach the axle-nuts of vehicles. Such wrenches as heretofore commonly constructed have been made with fixed handles, and in operating the wrench so as to screw or unscrew the axle-nuts it is the common very inconvenient practice to turn the wrench part way around with one hand, then change hands and turn part way around with the other hand, and thus continue alternating from hand to hand until the operation of screwing on or unscrewing the nut is completed. This method of operation is objectionable not only on account of inconvenience, but also because there is danger of detaching and dropping the wrench while changing hands; also, because in operating the wrench in that way the sleeves of the coat or other garment of the operator, frequently passing contiguous to the greasy and dirty hub of the wheel, are liable to come in contact therewith and thereby be greased or otherwise soiled or injured, and also because in turning the wrench and in making the necessary frequent changes the knuckles of the operator are very likely to be injured by striking against the spokes of the wheel.

The purpose of my invention is to provide a wrench so constructed and arranged that it may be operated with one hand by a reciprocating movement of the handle of the wrench without changing hands, without greasing or soiling the sleeve of the operator, and without striking the knuckles of the operator against the spokes of the wheel, thus completely obviating all of the objections hereinbefore stated.

With these ends in view my invention consists of certain novel and useful features of construction and combinations of parts shown in the annexed drawings, to which reference

is hereby made, and hereinafter particularly described and specifically claimed.

In the drawings, Figure 1 is a perspective view of the wrench with the parts in position to be locked together by a pin inserted in the registering holes in the two members of the wrench; and Fig. 2 is a perspective view of the wrench, showing the parts in position for the wrench to be operated by a reciprocating movement of the handle.

Similar letters of reference designate like parts in both of the views.

The wrench consists of a handle *a* and a socket-plate *b*, pivotally connected with the handle by a rivet *c*, which forms a pivot on which the parts turn. The socket-plate *b* is bent at an angle, as shown, so that the outer end of the plate, which is provided with a socket *b'*, may turn within the hub-cap of the wheel when the socket is in position on the axle-nut, and so that the handle may stand out from the wheel sufficiently to prevent the knuckles of the operator from striking the spokes of the wheel when the handle is reciprocated or turned, as hereinafter set forth.

In that part of the handle with which the socket-plate is connected and between the connecting-rivet *c* and the adjacent end of the handle is a transverse hole *d*, and in the socket-plate is a similar transverse hole *b²*, which when the parts are connected and parallel, as shown in Fig. 1, registers with the hole *d*.

In case it is desired to unscrew an axle-nut which has become so tightly set that unusual force is required to start it the handle may be rigidly connected, so as to greatly increase the leverage, by placing a suitable pin (not shown) in the holes *b²* and *d*, thus locking the parts together, so as to make the entire wrench rigid. I do not, however, limit myself to the use of the precise form of locking device shown and described, since it is obvious that other and different locking devices may be employed without departing from the spirit of or sacrificing any of the advantages of my invention.

By reason of placing the holes *d* and *b²* so that they will register with each other between the socket *b'* and the pivot *c*, as shown and described, I am enabled to make the socket-plate effective in turning the nut

without unduly increasing the length of the socket-plate. I am also enabled to avoid the lateral extension of the outer end of the socket-plate beyond the edges of the handle, which would occur during the using of the wrench if the socket-plate were made long enough to permit a hole to be placed between the rivet and the outer end of the socket-plate. Such projection of the outer end of the socket-plate beyond the handle would be very objectionable on account of the projecting end striking and injuring the person or the clothing of the operator. The ordinary manipulation of the wrench consists in placing the socket on the axle-nut and then giving a reciprocating movement to the handle, so as to cause the socket-plate to revolve and screw on or unscrew the nut, as the case may be.

In starting a nut which binds unusually hard the handle is rigidly connected with the socket-plate, as already described. The nut may then be started by turning the handle, and when the nut is started the pin may be withdrawn and the nut may then be unscrewed by giving a reciprocating movement to the handle, thereby causing the socket-plate to revolve and turn the nut, as hereinbefore set forth.

I am aware of the ordinary buggy-wrench having a laterally-extending part provided with a socket and a handle integral with the part containing the socket.

I am also aware of United States Patent No. 544,738, granted to H. J. Martin August 20, 1895, which shows a bar having jaws and pivotally connected with a handle, said bar being completely revoluble only when the nut is not in the jaw, and shows a locking device so placed that the pivot on which the arm turns lies between the jaw and the locking device.

I am also aware of English patent to Harford and Sutcliffe, No. 14,973, dated November 18, 1886, which shows a locking device adapted to rigidly connect a rotatable plate having a series of jaws with a handle on which said plate is supported in such manner

that either of the jaws may be brought into a position adjacent to the pivoted end of the wrench, said plate, however, being always locked when in use.

I am not aware of the existence prior to my invention of a wrench having a revoluble plate provided with a laterally-extending socket, said plate when in position on the axle-nut being completely rotatable by a reciprocating movement of a handle with which said plate is pivotally connected; neither am I aware of the existence prior to my invention of a wrench having a socket-plate pivotally connected with a handle and a locking device connecting said plate with said handle at a place between the socket in said plate and the pivot on which said plate turns.

In view of the foregoing I do not claim, broadly, a rotatable plate; neither do I claim, broadly, a device for locking the socket-plate to the handle of the wrench.

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a vehicle - wrench of the class described, a socket-plate having a pivotal connection with a handle, also having a lateral extension provided with a socket, also having a transverse hole between said socket and said pivotal connection; in combination with a handle with which said socket-plate is pivotally connected, said handle having a transverse hole with which the transverse hole in said socket-plate registers, as set forth.

2. In a vehicle - wrench of the class described, the combination of a handle, a laterally-extending socket-plate provided with a socket, a pivot connecting the socket-plate with the handle, and a locking device adapted to connect the socket-plate with the handle between said socket and said pivot, as set forth.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

JOHN S. HOUSE.

Witnesses:

W. E. BAKER,
C. E. BODE.