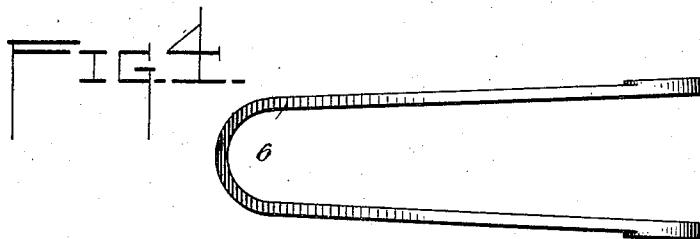
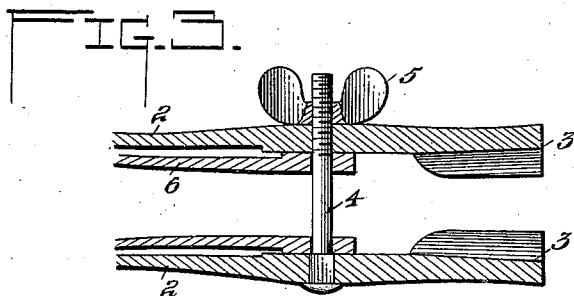
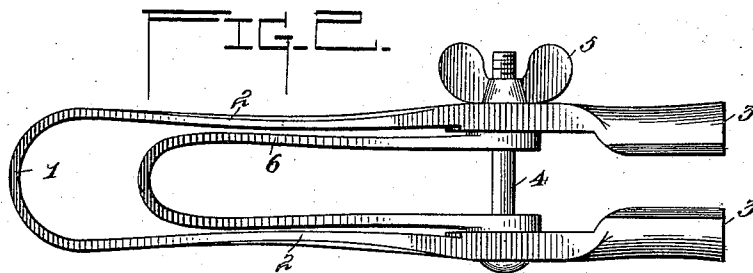
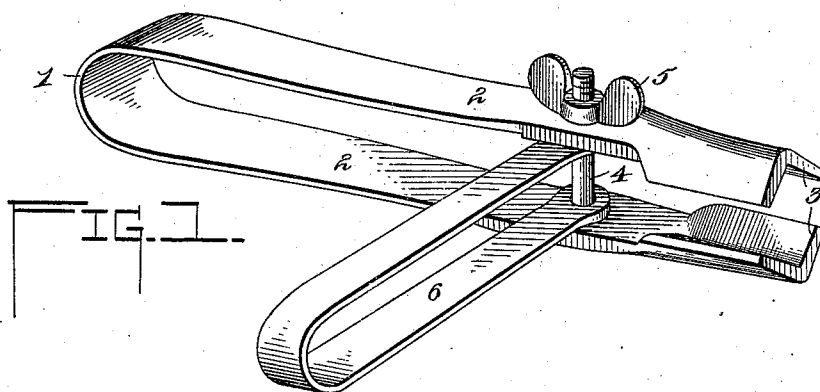


(No Model.)

J. J. REINHART.  
WRENCH.

No. 575,989.

Patented Jan. 26, 1897.



Inventor

*John J. Reinhart.*

Witnesses

*A. J. LaVare,*

*R. M. Smith*

By *his* Attorneys,

*C. A. Snow & Co.*

# UNITED STATES PATENT OFFICE.

JOHN J. REINHART, OF LOOGOOTEE, INDIANA, ASSIGNOR OF ONE-HALF TO  
WILLIAM HOUGHTON, OF SAME PLACE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 575,989, dated January 26, 1897.

Application filed October 12, 1896. Serial No. 608,624. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. REINHART, a citizen of the United States, residing at Loogootee, in the county of Martin and State of Indiana, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches, and has for its object to provide a simple, cheap, and efficient wrench by means of which nuts may be removed and replaced without the necessity of handling the same with the fingers and getting the same soiled with grease and dirty oil.

The improved wrench is designed especially for use upon the spindle-nuts of carriages, wagons, &c., but is of course applicable in any place and at any point where a wrench is useful.

The invention consists in an improved wrench embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a wrench constructed in accordance with the present invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detail section taken in line with the bolt. Fig. 4 is a detail elevation of the folding handle.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The main body of the improved wrench contemplated in the present invention is constructed in a single piece, being formed from a strip or bar of metal. This strip is folded upon itself at about a central point to form a loop 1 and spaced arms 2, which constitute the handle of the wrench. The strip may be of spring metal or after the loop 1 is formed the metal adjacent thereto may be spring-tempered, so as to impart to the arms 2 a normal tendency to spring apart. The ends of the arms 2 are widened and bent centrally and longitudinally to form half-square or V-shaped jaws 3, between which a nut may be engaged.

Adjacent to the jaws 3 the arms 2 are pro-

vided with transversely-alined openings, and a bolt 4 passes through said openings and receives upon its threaded end a winged or thumb nut 5, with the aid of which the jaws 3 may be closed upon a nut or released therefrom.

6 designates a folding handle which is substantially U-shaped or in the form of an open loop. The extremities of the folding handle 6 are formed with openings adapted to receive the bolt 4. The handle 6 is arranged to fold entirely within the plane of the main handle of the wrench and preferably between the arms 2 thereof, being fulcrumed upon the bolt 4, as shown. The folding handle 6 may, however, be fulcrumed on the bolt 4 outside of the arms 2, in which case said folding handle will be made sufficiently large to extend around the main handle and the loop 1.

In operation the wrench is engaged with a nut by tightening the thumb-nut 5, after which the folding handle is rocked into a position substantially at right angles to the main handle and forms a lever for giving the necessary power and purchase to start the nut or to tighten the same, as the case may be. Upon the removal of the nut the latter is still retained between the jaws of the wrench, thus obviating the soiling of the fingers.

The arms or terminal portions of the folding handle 6 may be tempered, so as to have a normal tendency to swing apart and bear with a spring-pressure against the inner surfaces of the arms 2 for forcing the wrench-jaws apart when released by the thumb-nut 5. Thus the spring-power of the folding handle may be utilized in conjunction with the spring tendency of the arms 2 for forcing the jaws apart, or the spring-temper in the arms 2 may be dispensed with, or said arms may be formed separately and hinged together at the butt-end of the main handle.

It is also within the spirit of this invention to fulcrum the folding handle independently of the bolt 4. When the folding handle is not required, it may be folded compactly within the plane of the main handle, where it will be out of the way.

It will thus be seen that the wrench is sus-

ceptible of various changes in the form, proportion, and minor details of construction, which may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. A wrench consisting of two U-shaped spring members pivoted upon a single bolt, one of said members having opposing jaws at its free ends, and the other member adapted to be swung outward to serve as an operating-handle, or to fold out of the way within the other member, substantially as described.

2. A wrench comprising spaced connected arms having nut-engaging jaws at their ends, in combination with a bolt connecting said arms for operating the jaws, and an auxiliary

handle fulcrumed on said bolt and adapted to fold, substantially as described.

3. A wrench comprising connected spaced arms having nut-engaging jaws at their ends, in combination with a bolt connecting said jaws, and an auxiliary handle fulcrumed on said bolt between said arms, said auxiliary handle being in the form of a loop and comprising spring terminal portions which operate upon the aforesaid arms, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN J. REINHART.

Witnesses:

WM. HOUGHTON,  
HARRY G. STRANGE.