

No. 624,849.

Patented May 9, 1899.

J. C. NICOL.
NIPPLE WRENCH.

(Application filed Sept. 29, 1898.)

(No Model.)

Fig. 1.

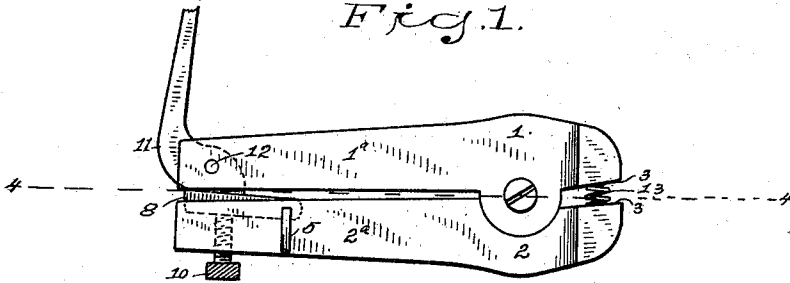


Fig. 2.

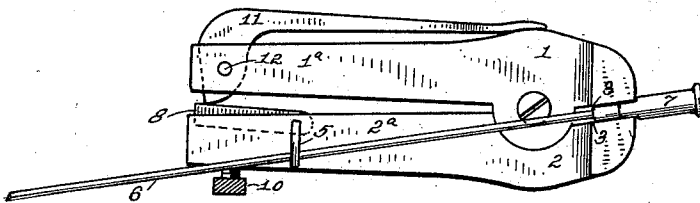


Fig. 3.

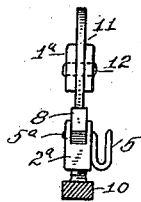
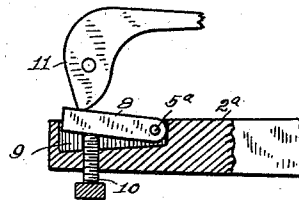


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN C. NICOL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO HENRY C. RYLANDS, OF SAME PLACE.

NIPPLE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 624,849, dated May 9, 1899.

Application filed September 29, 1898. Serial No. 692,217. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. NICOL, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Nipple-Wrenches, of which the following is a specification.

My invention relates to an improved nipple-wrench, a tool used in truing bicycle-wheels, and has for its object to provide means whereby a firm unyielding grip can be maintained on the spoke-nipple by means of a cam-lever operatively mounted in one of the shanks of the wrench, acting against an adjustable shoe pivotally mounted in the opposite shank of the wrench.

Another feature of my improvement consists in the angular formation of the faces of the jaws, such faces being parallel to each other, but angularly inclined with respect to the axial line of the wrench, combined with a spoke-supporting hook connected with one of the shanks, so that when the jaws are closed the grip of the angular faces upon the nipple will throw the wrench firmly against the spoke of the wheel, and thereby prevent the accidental displacement of the wrench during the operation of truing.

Heretofore wrenches of this character have been constructed with a simple thumb-screw to tighten the jaws on a nipple of the spoke, the supporting-hook being placed on the axial or central line of the wrench whose jaws or faces thereof were straight. The spoke being loosely embraced by the hook or support would drop out as soon as the wrench was turned, and the grip of the jaws being controlled by a simple thumb-screw the wrench would tilt laterally and slip from the nipple.

To enable others to understand my invention, reference is had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved wrench in open position with a broken view of the cam-lever thrown back. Fig. 2 is a side elevation of the wrench as it will appear in actual operation with the cam-lever thrown forward and the jaws engaging a nipple, with the spoke thrown out of the axial line of the wrench and into the supporting-hook by means of the angular-shaped

jaws. Fig. 3 is a rear end elevation looking in the direction of arrow *a* of Fig. 2. Fig. 4 is a detail broken view, partly in section, of the lower shank, showing the construction and mode of operation of the adjustable shoe and a broken view of the cam-lever engaged therewith.

The construction and operation are as follows:

1 and 2 are the two parts of the wrench, having the ordinary shank portions 1^a and 2^a.

3 are the angular faces, set at a decided inclination to the dotted line which represents the axial line of the wrench. Near the opposite end of the lower shank 2^a is the supporting-hook 5, adapted to receive the spoke 6 when the angular faces of the wrench grip the nipple 7.

8 is a shoe, Fig. 4, pivotally supported at one end to the shank 5^a of the hook-support 5. The opposite end of said shoe is free to swing up or down on its pivotal support in the recess 9 of the shank 2^a.

10 is an adjusting-screw passing through shank 2^a and is adapted to adjust the position of the shoe with respect to the cam-lever 11, pivotally supported on the pin 12 of the upper shank 1^a.

13 is a spring to throw the jaws open.

The operation of the wrench is as follows: The vertical face of the wrench is simply placed against a spoke of a bicycle-wheel without giving any attention to the position of such spoke relative to its hook-support 5. When, therefore, the jaws are closed down on the tang of the nipple 7 by means of the cam-lever 11 before mentioned and shown at Fig. 2, the closing of the angular jaws will throw the shanks of the wrench around until the bottom of hook 5 will rest firmly against the spoke 6, so that during the operation of turning the nipple 7 the wrench cannot possibly become disengaged from the spoke, and nothing short of throwing back the cam-lever will release the spoke, or, rather, the engagement of the hook portion of the wrench, therefrom. This feature is of great advantage in truing bicycle-wheels, as a saving of time and annoyance heretofore existing with the wrenches now in use.

The adjustable feature of the clamping

mechanism as represented by the pivotally-hung shoe, will also be appreciated by the fact that by reason of the shoe being hung at one end the slightest adjustment can be had, so as
 5 to take up the wear of the toe of the cam-lever or to exert a greater or less pressure on the object placed between the gripping-faces of the wrench.

I do not wish to be understood as claiming,
 10 broadly, a cam-lever to close the jaws nor a spring to open them nor a spoke-supporting hook connected with one of the members of the wrench.

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

1. The combination, in a nipple-wrench, of the character described, having a cam-lever pivotally supported in one of its shanks, of
 20 an adjustable shoe pivotally supported at one end to the oppositeshank, an adjusting-screw

adapted to engage said shoe near its free end, for the purpose set forth.

2. The combination, in a nipple-wrench 25 having shank members, a spoke-support placed below the axial line of the wrench, angular faces provided on the jaws of said wrench having an inclination toward said spoke-support, so that when the jaws are
 30 closed the shanks of the wrench will be thrown toward said axial line so as to bring the bottom of said support firmly against the wheel-spoke, combined with cam-lever and adjustable shoe whereby a firm and unyielding grip
 35 on said jaws is maintained.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 26th day of September, A. D. 1898.

JOHN C. NICOL.

Witnesses:

DAVID M. LACKIE,
 J. W. RANGE.