No. 776,459. PATENTED NOV. 29, 1904.

W. V. GAGE.

WRENCH.

APPLICATION FILED FEB. 6, 1904.

NO MODEL.

Fig 1

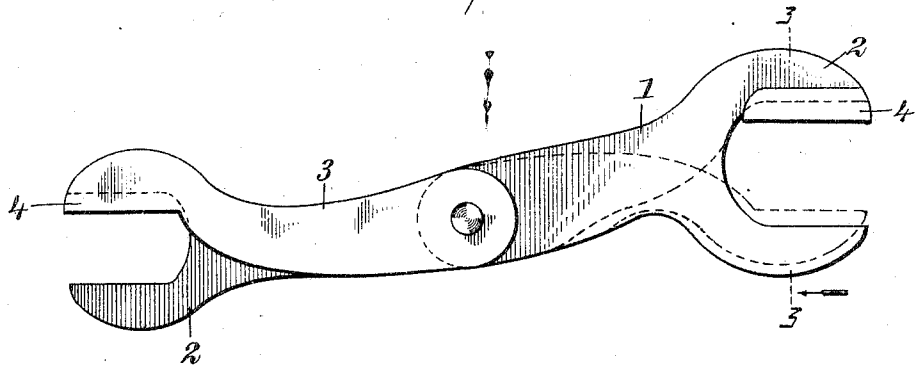


Fig 2

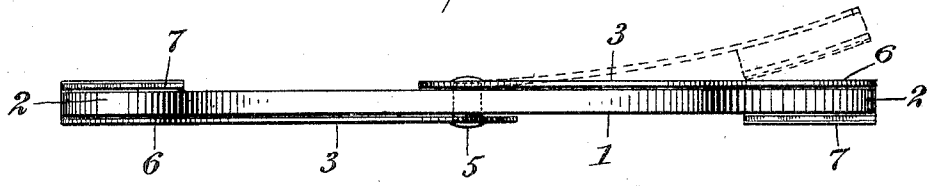


Fig 3

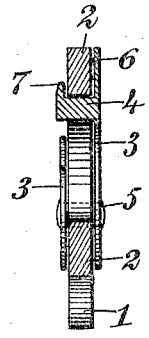
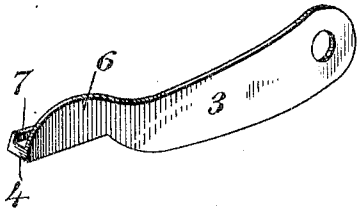


Fig 4



WITNESSES:

John J. Kittle

A. E. Davis

INVENTOR

Will V. Gage

BY

ATTORNEYS

No. 776,459. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

WILL VERNON GAGE, OF OMAHA, NEBRASKA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 776,459, dated November 29, 1904.

Application filed February 6, 1904. Serial No. 192,332. (No model.)

To all whom it may concern:

Be it known that I, WILL VERNON GAGE, a citizen of the United States, and a resident of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

My invention relates to wrenches and spanners and is especially adapted to the form known as "S-wrenches," as well as to straight wrenches.

The objects of my invention are to provide a wrench of the character mentioned which will be adapted to operate upon nuts and bolt-heads of different sizes and thicknesses without the use of complicated adjusting devices and with a corresponding simplicity and cheapness of construction.

Further objects will appear in the course of the subjoined description.

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 represents a plan view of a preferred form of my invention. Fig. 2 represents an edge view of the same. Fig. 3 is a sectional view on the line 3 3 of Fig. 1, and Fig. 4 is a perspective view of a detail.

In the drawings, 1 represents the body of the wrench, and 2 the jaws, which may be of any ordinary construction. Upon the body of this wrench are attached one or more arms 3, having jaws 4, which are preferably of different thicknesses, so that they may be employed with nuts and bolt-heads of different thicknesses. The arms 3 are preferably attached to the body of the wrench at or near its center or at any convenient point by means of a rivet or screw 5, which will preferably pass through and secure both or all of said arms. The arms 3 may be made of spring-steel or other flexible metal in order to allow for changing their position, as shown in dotted lines in Fig. 2. For heavy wrenches the arms can be made of non-elastic steel or other suitable or preferred metal, a screw connection being preferably used in that case to permit changing the arms to the different positions. Upon the arms 3 may be formed enlarged portions 6, designed to fit over one side of the jaws 2, and the jaws 4 are preferably provided with flanges 7, fitting over the other side of the jaws 2. By this construction the wrench may obviously be used for nuts of various sizes, the arms being capable of use with either pair of jaws on the two ends of the wrench to decrease the size of the jaw. The wrench, as shown with the different thicknesses of the jaws 4, may be used to accommodate eight different sizes of nut or bolt heads, each end accommodating four sizes, according as it is provided with either of the jaws 4, both of them or neither.

My improvement is very simple in construction, and therefore cheap to manufacture, and contains no springs or screw-threads or other small devices which are likely to easily get out of order.

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

1. A wrench comprising a body, a pair of rigid jaws on one end thereof, and an arm provided with a jaw and adapted to coact with one of said rigid jaws.

2. A wrench comprising a body, a pair of rigid jaws on one end thereof, and an arm provided with a jaw and adapted to coact with one of said rigid jaws, said arm being pivoted to said body and adapted to be swung into different positions with relation to said rigid jaws.

3. A wrench comprising a body, a pair of rigid jaws on one end thereof, and an arm provided with a jaw and adapted to coact with one of said rigid jaws, said arm being adapted to be fixed in different positions so as to hold nuts of different sizes between it and one of said rigid jaws.

4. A wrench comprising a body, a plurality of pairs of rigid jaws thereon, a plurality of arms attached to said body, a jaw on each arm, and means for guiding said last-mentioned jaws into coöperating relation to said rigid jaws.

5. A wrench comprising a body, a plurality of jaws forming extensions thereon, a plurality of arms independently pivoted to said body, and a jaw on each of said arms, said last-mentioned jaws being of different thicknesses.

6. A wrench having a pair of jaws on each end thereof, an arm on each side of said wrench, and a jaw on each arm, each of said arms being capable of coacting with each of said jaws.

7. A wrench having a pair of jaws on each end thereof, two arms, a jaw on each arm, and means for attaching the arms to opposite sides of said wrench and permitting them to be swung into operative position with relation to each of said pairs of jaws.

8. A wrench comprising jaws, and a resilient arm having a jaw adapted to coact with one of the first-mentioned jaws and to be removed therefrom by bending the arm outwardly from the body of the wrench.

9. A wrench comprising a body, two pairs of rigid jaws thereon, and an arm provided with a jaw and adapted to coact with each of said pairs of rigid jaws.

10. A wrench comprising a body, a pair of jaws on each end thereof, and a resilient arm provided with a jaw adapted to coact with either of said first-mentioned pairs of jaws.

11. A wrench comprising a body, a plurality of pairs of jaws thereon, a plurality of resilient arms attached to said body, a jaw on each of said arms, and means for guiding said last-mentioned jaws into coöperating relation with said first-mentioned jaws.

12. A wrench comprising a body, a plurality of jaws forming extensions thereon, a plurality of resilient arms independently pivoted to said body, and a jaw on each of said arms; said last-mentioned jaws being of different thicknesses.

13. A wrench having a pair of jaws on each end thereof, a resilient arm on each side of said wrench, and a jaw on each arm; the jaw on each of said arms being capable of coacting with each of said first-mentioned pairs of jaws.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILL VERNON GAGE.

Witnesses:
CHARLES E. CLAPP,
B. B. DAVIS.