(No Model.)

W. H. GRIFFIN & E. P. NICHOLS.

ADJUSTABLE WRENCH.

No. 499,919. Patented June 20, 1893.

Fig. 1.

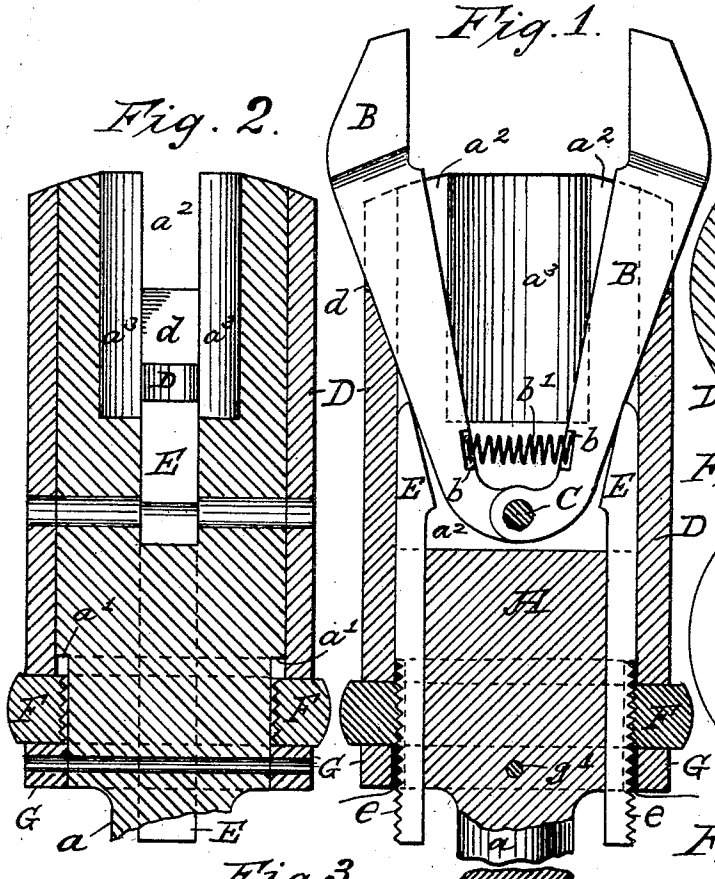


Fig. 2.

Fig. 4.

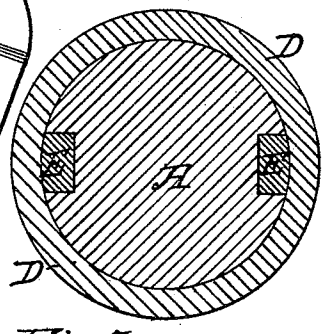


Fig. 5.

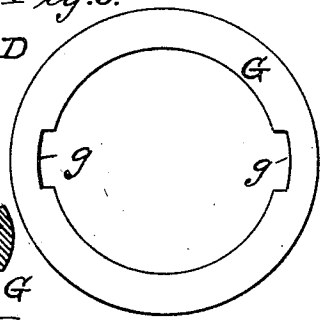


Fig. 6.

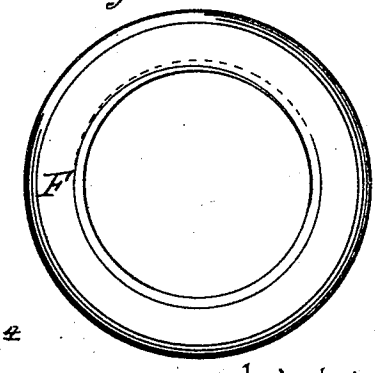


Fig. 3.

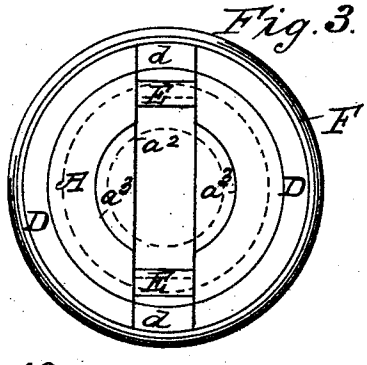
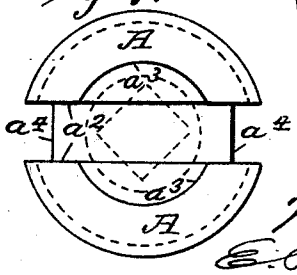


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLARD H. GRIFFIN AND ELMER P. NICHOLS, OF HENNIKER, NEW HAMPSHIRE.

ADJUSTABLE WRENCH.

SPECIFICATION forming part of Letters Patent No. 499,919, dated June 20, 1893.

Application filed March 17, 1893. Serial No. 466,406. (No model.)

To all whom it may concern:

Be it known that we, WILLARD H. GRIFFIN and ELMER P. NICHOLS, citizens of the United States, residing at Henniker, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Adjustable Wrenches; and we 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.

Our invention relates to the so called socket-wrench for which it is designed to be substituted;—the object being to provide a wrench which is capable of adjustment to nuts of various sizes and still be readily operative in all places where a socket-wrench would be required.

The invention will be fully set forth in the following specification and claims and clearly illustrated in the accompanying drawings forming a part of same, of which—

Figure 1. is a sectional elevation showing the jaws of the wrench fully extended. Fig. 2. is a sectional elevation cut through in the direction opposite to that shown in Fig. 1. and having the adjustable jaws removed. Fig. 3. is a plan view of the parts shown in Fig. 2. Fig. 4. is a cross-section taken through Fig. 1. just below the adjustable jaws. Fig. 5. is a plan view of one of the retaining sleeves. Fig. 6. is a plan view of the threaded adjusting collar, and Fig. 7. is a plan view of the wrench stock as seen in Fig. 1. having all detachable parts removed.

Similar reference letters indicate like parts throughout the various views.

A, is the wrench stock, having a shank a. The stock A, is formed of uniform diameter from its outer end to the shoulder a' where the diameter is reduced as shown, for a purpose to be hereinafter explained, and the outer end is slotted at a^2, for the reception of the adjustable jaws B, and grooved at a^3, to a depth sufficient to receive that end of any ordinary bolt which may project through its nut.

The jaws B, are made substantially in the form shown, and are pivotally connected each to the other, and both to the stock A, by means of a pin C, passing through the said stock and through a sleeve D fitting the said stock. The jaws B, are expanded normally by means of a light spring b', resting within a slot b, formed for this purpose in either jaw as shown. When expanded, said jaws rest within slots d, of the sleeve D which are formed of the same width and in alignment with the slot a^2 of the stock A.

The jaws are adjusted each by a wedge shaped bar E, fitted to grooves a^4, formed at points diametrically opposite in the sides of the stock A, and each in alignment with the slot a^2 of said stock. The lower portion of each bar E, is provided on the outer edge with a thread e, and the reduced diameter of the stock A shown below the shoulder a', is necessary in order to mount the actuating collar F, and its retaining collar G, below the sleeve D, as shown; both of which are as much smaller in diameter than the stock A, as will equal the depth of the threads on the adjusting bars E, the actuating collar F, being threaded to fit the threads of the said bars as shown in Figs. 1, 2, and 6. The collar G, is bored to fit the reduced portion of the stock A, and then slotted at points diametrically opposite as seen at g, to a depth sufficient to represent a diameter within said slots equal to that of the upper or largest diameter of said stock. This collar may be attached by screws or a pin g', to said stock, thus supporting the actuating collar F, between the said sleeve D, and collar G.

The actuating collar F, may be formed hexagonal, octagonal, or be milled so as to be easily revolved, and by rotating it in one direction the jaws B, may be closed toward each other for fitting a small nut, and vice versa;—the adjustment being accomplished by reason of the wedge shaped bars E, and spring b', acting upon said jaws B.

The shank a, may be squared at its outer end as shown in Fig. 1, so as to be turned by the application of an ordinary key wrench.

Having described our invention, what we claim is—

1. In an adjustable socket-wrench, a stock having a slot in its end, in which is pivoted a pair of adjustable jaws, and longitudinal

grooves, one at each side in alignment with said slot, the said jaws and a suitable spring for normally separating the same, a slotted sleeve mounted upon said stock, the threaded adjusting bars resting within the longitudinal grooves of said stock, and an actuating collar threaded to fit said adjusting bars, all substantially for the purpose set forth.

2. In an adjustable wrench, the combination with the pivoted jaws and a spring for pressing them normally apart, and the slotted and grooved stock in which said jaws are pivoted, of a sleeve mounted upon said stock, a pair of adjusting bars mounted in the grooves of said stock and within said sleeve, and means substantially as shown for moving said adjusting bars higher or lower upon said jaws for setting the wrench to a given nut.

3. The combination of a slotted and longitudinally grooved stock, having a shank with its outer end squared for carrying a key wrench, a pair of jaws pivoted within the slot in said stock, a spring for normally separating the same, a pair of adjusting bars having a portion of their outer edge threaded and fitting one in either of said longitudinal grooves of said stock, a sleeve for retaining said adjusting bars in position, a threaded collar for actuating said bars, and a retaining collar secured underneath said threaded collar.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLARD H. GRIFFIN.
ELMER P. NICHOLS.

Witnesses:
J. B. THURSTON,
CARRIE E. EVANS.