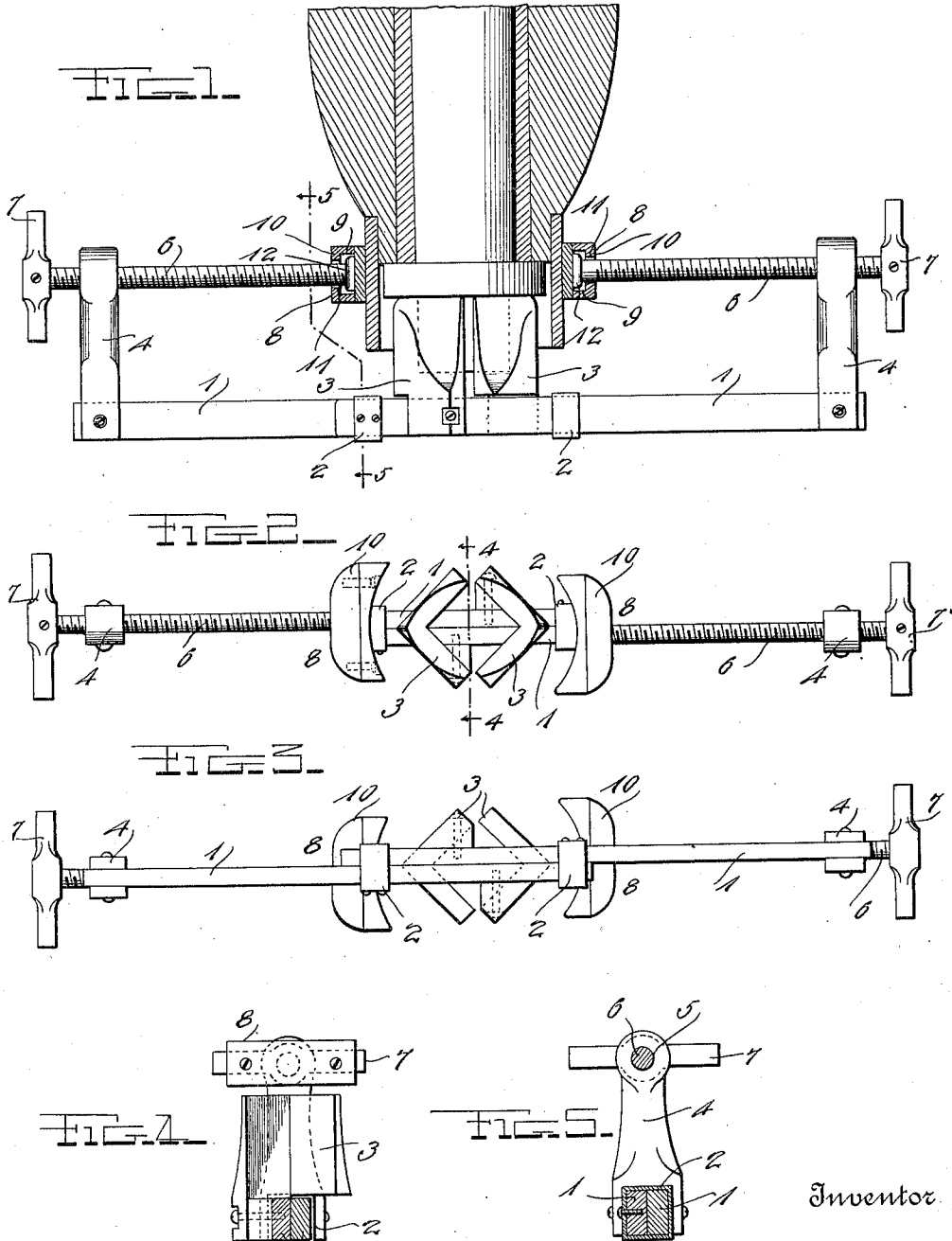


W. CHARLTON.
COMBINED WRENCH AND CLAMP.
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Patented Sept. 17, 1912.



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UNITED STATES PATENT OFFICE.

WILLIAM CHARLTON, OF MARINETTE, WISCONSIN.

COMBINED WRENCH AND CLAMP.

1,039,027.

Specification of Letters Patent.

Patented Sept. 17, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM CHARLTON, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Combined Wrenches and Clamps; and I do 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.

This invention relates to improvements in wrenches.

One object of the invention is to provide a wrench designed particularly for removing taps or wheel retaining nuts from vehicle axles and having combined therewith a clamp whereby the wrench may be firmly secured to the hub of the wheel when engaged with the nut and the wheel employed for turning the nut off or on.

With this and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a plan view of my combined wrench and clamp showing the same applied to a nut and to the hub of a vehicle wheel, said hub being shown in section; Fig. 2 is an inner side view of the wrench and clamp, parts being broken away and in section; Fig. 3 is an outer side view thereof. Fig. 4 is a vertical cross sectional view on the line 4—4 of Fig. 2; Fig. 5 is a similar view on the line 5—5 of Fig. 1.

My improved wrench comprises a pair of jaw operating bars 1 which are slidably secured together by clips or connecting bands 2, one of which is secured to the inner end of each of the bars and embraces the adjoining or co-acting bar as shown. Secured to the bars 1 near their inner ends are nut engaging jaws 3 each of which is of right angular form and arranged diagonally across the bars, so that when the bars are drawn outwardly the jaws will be brought toward each other and into operative engagement with the tap or nut to be removed. In arranging the jaws to operate in the manner described one half of each jaw projects across the bar opposite to that on which the jaw is formed or otherwise rigidly secured,

so that the longitudinal center of the jaws is in line with the engaging sides of the operating bars whereby when the jaws are engaged with the nut the bars 1 will be in line with the center of the hub.

Pivotaly connected to the outer ends of the bars 1 are combined handles and clamp supporting arms 4, said arms having in one end rectangular notches in which the outer ends of the bars 1 are engaged and through said notched ends of the arms and the ends of the bars are arranged bolts or other suitable fastening devices whereby the arms are secured to the bars and have a slight pivotal movement thereon. In the outer ends of the arms are formed transversely disposed threaded passages 5 with which are engaged threaded clamp operating rods 6 on the outer ends of which are secured operating handles 7. Swiveled to the inner ends of the rods 6 are hub clamping jaws 8, said jaws being of segmental form to embrace the sides of the hub and said jaws are formed in separable sections which are bolted or otherwise detachably secured together.

In the engaging surfaces of one of the jaw members is formed a recess 9 and in the inner sections 10 of the jaws and communicating with the recesses 9 are centrally disposed passages 11 through which the ends of the rods 6 pass, said ends having thereon heads 12 which engage the recesses 9 and thus loosely connect the jaws with the ends of the rods. The passages 11 are of greater diameter than the rods, thus forming a universal or swivel point between the jaws and the ends of the rods to permit the jaws to adjust themselves to the shape of the hub when engaged therewith.

In using my improved wrench the same is grasped by the arms 4 and the jaws inserted in the end of the hub and engaged with the nut by pulling outwardly on the bars 1 as hereinbefore described. After the jaws 3 have thus been engaged with the nut, the rods 6 are screwed inwardly through the outer ends of the arms 4 thus clamping the jaws 8 into firm engagement with the outer sides of the hub thereby securely fastening the wrench to the hub. After the wrench has thus been engaged with the nut and secured to the hub the wheel is turned backward which action will operate the

wrench in the proper direction for unscrewing the nut from the end of the axle. The nut when thus removed is retained by the jaws 3 of the wrench and is held in position
5 in the hub to be again engaged with the end of the axle when the wheel is replaced. When the wheel has been replaced and the nut thus brought into engagement with the end of the axle a forward rotation of the
10 wheel will screw the nut back onto the axle. It will thus be seen that the nut may be removed and replaced on the axle without being handled or laid down, thus preventing the soiling of the hands from the axle grease
15 or obviating the possibility of sand or foreign matter adhering to the nut as frequently occurs when the latter is laid down after being removed from the axle.

From the foregoing description taken in
20 connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion
25 and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

A wrench for removing hub retaining
nuts of vehicles comprising two overlapping
slidably connected jaw operating bars, nut
engaging jaws secured to said jaws near
their inner ends and extending laterally in
35 the same direction, clamp supporting arms on the outer ends of said bars and extending in the same direction in a plane at right
angles to said bars and in the same direction as said nut engaging jaws and having
40 screw threaded passages in their free ends, said passages extending in a plane parallel with said bars, threaded clamp operating rods operable in the threaded passages of
said arms, hub clamping jaws swiveled to
45 the inner ends of said rods, and means for actuating said rods.

In testimony whereof I have hereunto set my hand in presence of the subscribing witnesses.

WILLIAM CHARLTON.

Witnesses:

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ESTELLE CARNEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."