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PATENTED JAN. 8, 1907.

H. D. AUPKE.

WRENCH.

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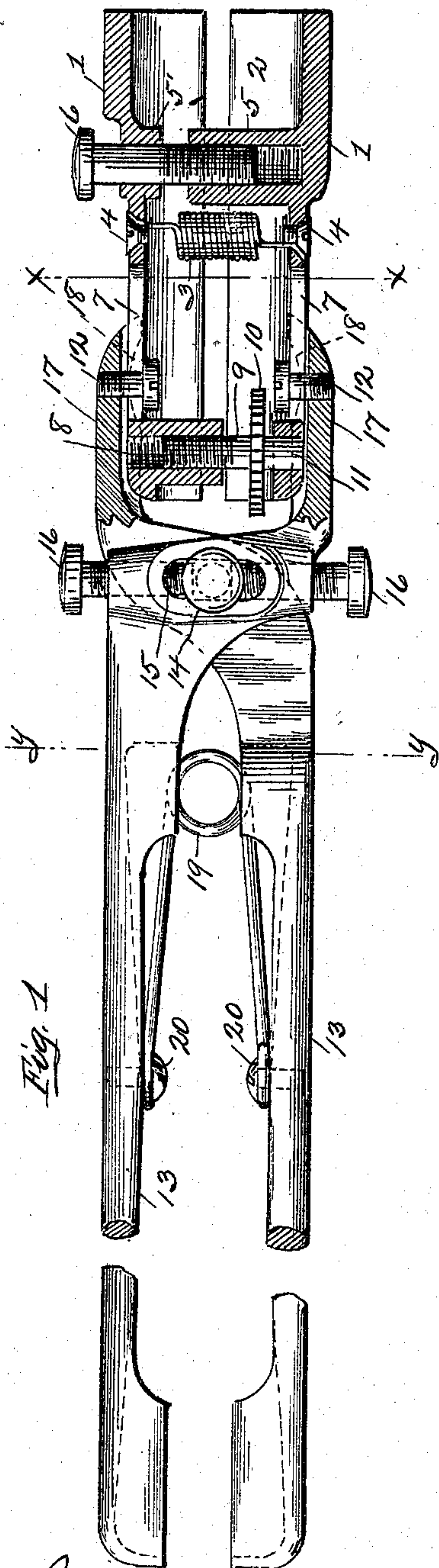


Fig. 1

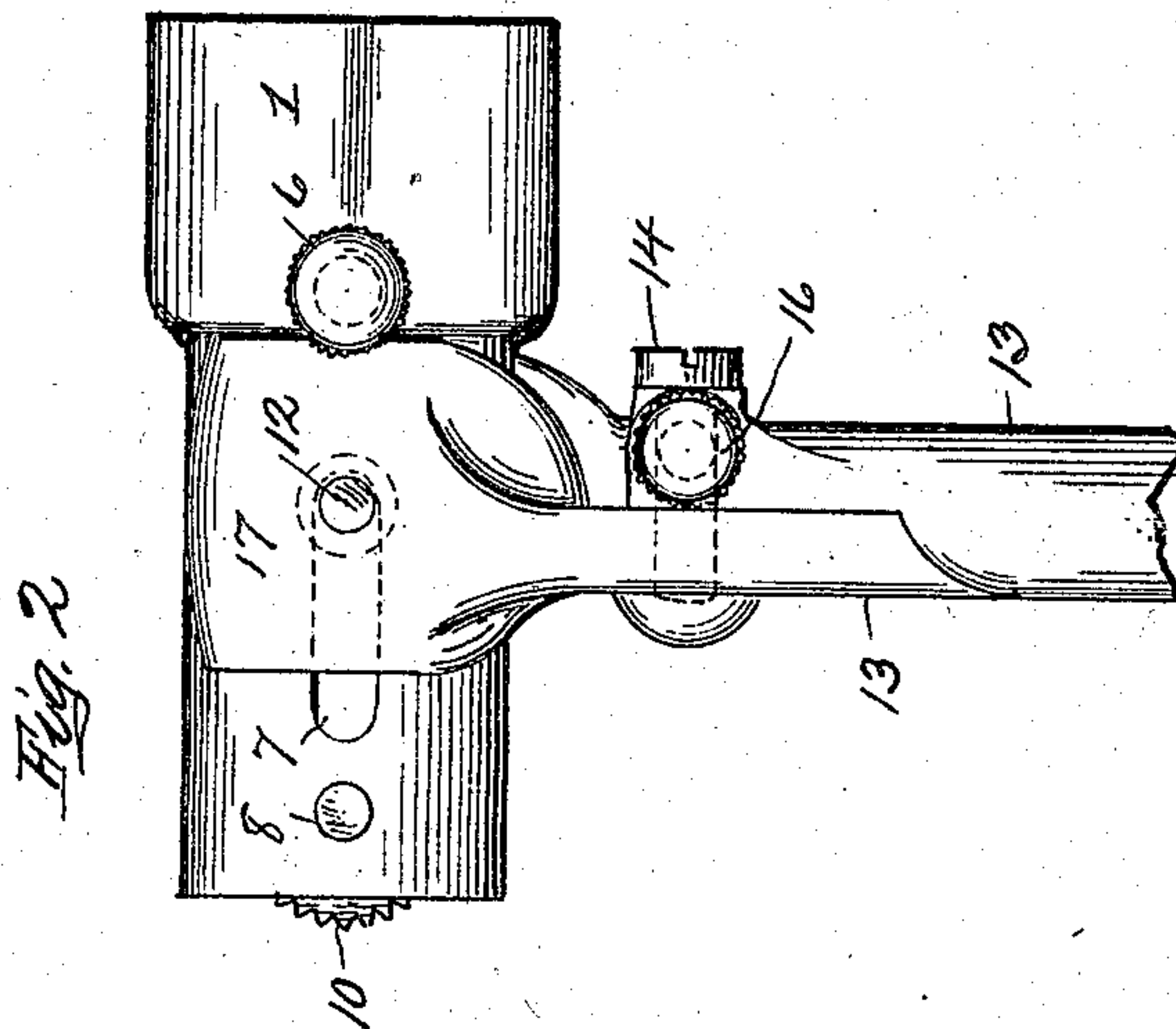


Fig. 2

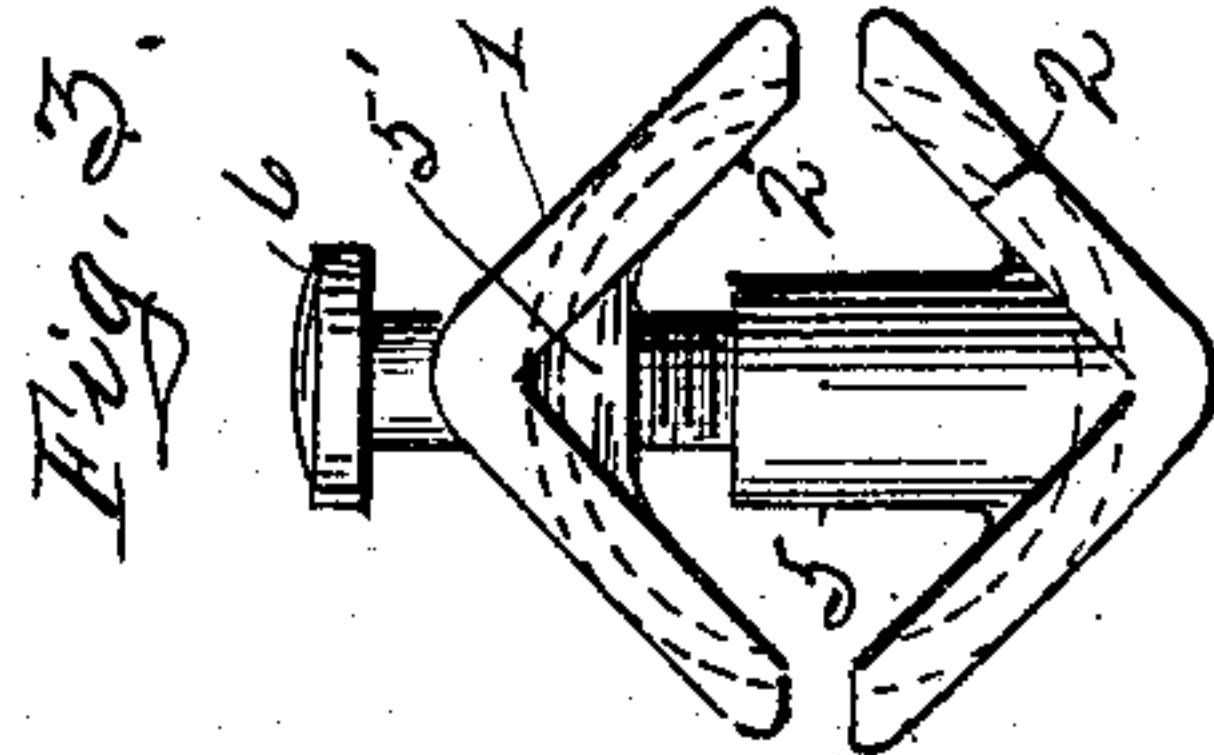


Fig. 3

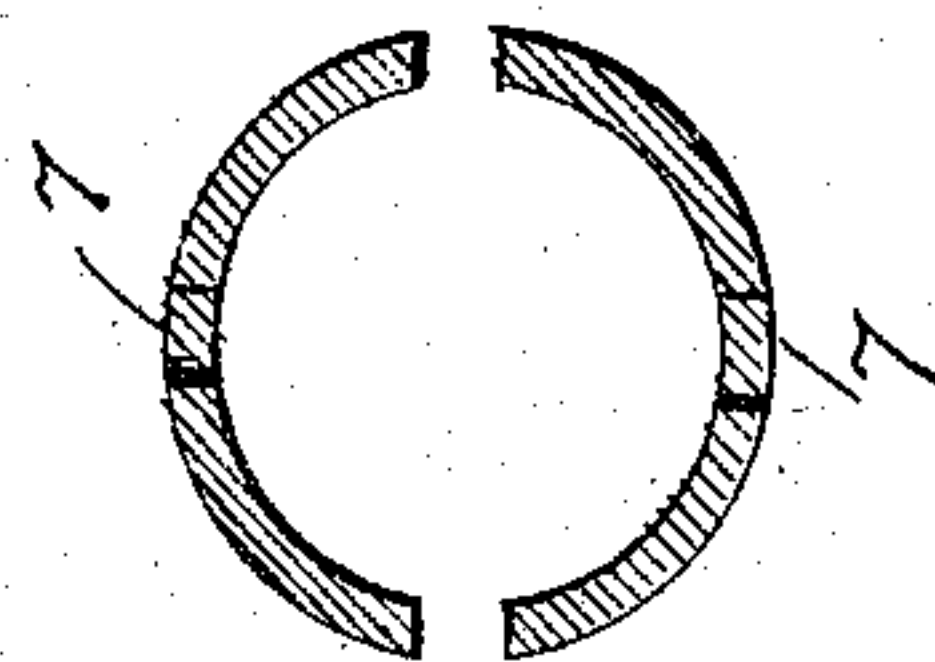


Fig. 4

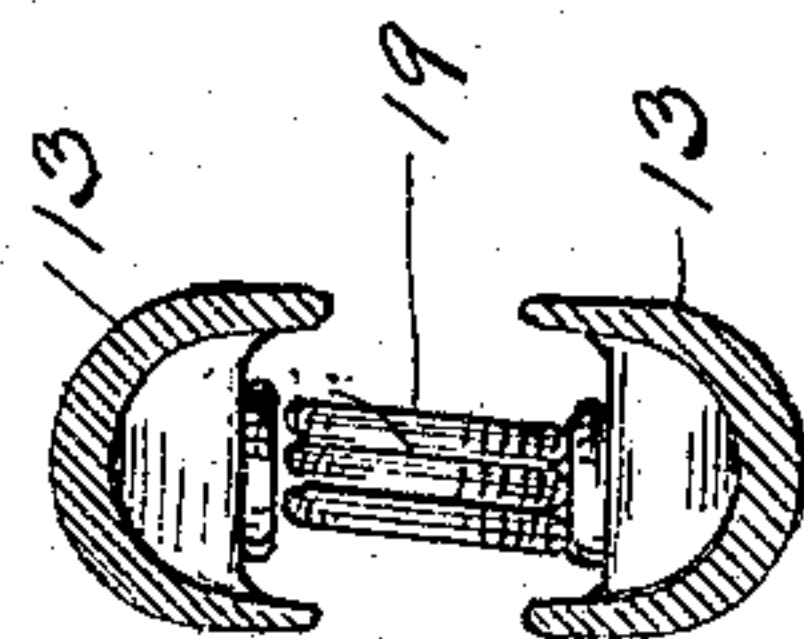


Fig. 5

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UNITED STATES PATENT OFFICE.

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WRENCH.

No. 840,549.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY D. AUPKE, a citizen of the United States, residing at Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved wrench, and it is particularly adapted for removing and replacing the nuts of vehicle-axles; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of my improved wrench, the forward end of which is shown in section the better to show the inner working parts, said wrench being constructed and arranged in accordance with my invention. Fig. 2 is a plan view of the same, showing the tongs in an altered position. Fig. 3 is an end view of the wrench proper. Fig. 4 is a sectional elevation taken on the line *x x* of Fig. 1, showing the form of the two parts of the wrench at that point. Fig. 5 is a sectional elevation on the line *y y* of Fig. 1, showing the spring arranged within the handles of the tongs.

To put my invention into practice, and thereby provide a wrench for the purpose of removing and replacing the nuts of vehicle-axles with the least possible labor, I form from cast metal two annular or cylindrical sections 1, the one almost analogous with the other, each being provided at the front with angular interior portions 2 to form a square when the parts are in the proper position, the area of which corresponds to the size of the nuts to be operated upon. These two sections 1 are formed with interior integral bosses, the one, 5, with a screw-thread and the other, 5', with a smooth bore, the two arranged in line and adapted to receive an adjusting-screw 6, which regulates and limits the movement of one jaw from the other. At the other end of these members forming the jaws of the wrench and parallel with the adjusting-screw 6 is another, 9, which is arranged in the interior, having a threaded portion 8, a socket part 11, and an operating-wheel 10,

which latter protrudes slightly from the rear of said members 1, as will be best seen by reference to Figs. 1 and 2 of the drawings. These members 1, forming the jaws of the wrench, are connected the one with the other by a spiral spring 3, which tends to draw the jaws together, and the said spring held in position by means of short screws 4.

Loosely connected to the members 1, forming the jaws, is a pair of tongs of peculiar construction, said tongs comprising handles 13 of suitable length, the forward ends of which are formed into jaws 17, which are permanently attached to said members 1 by short screws 12, passed through slots 7 in such manner that the tongs may be turned at right angles to the wrench proper and moved the length of said slots, as shown at Fig. 2 of the drawings. Recesses 18 are formed in the jaws 17 of the tongs and at right angles to the length thereof, said recesses being in curved lines to conform with the cylindrical sections 1 of the wrench when the tongs are brought to a right-angular position, as at Fig. 2. These tongs are coupled together by a pivot-pin 14, which is firmly attached to one of the tongs 13 and passes through a vertical slot 15, formed in the other tang. Entering this last-mentioned slot 15 from either end are temper-screws 16, which serve to alter the pivotal relation of the jaws 12, in order that said jaws may be set and maintained at different distances apart, corresponding with the adjustment of the jaws of the wrench proper. Intermediate of the two handles 13 and at the proper position is a spring which tends to draw said handles together, said spring 19 being attached in position by means of screws 20.

In operation the wrench proper is opened or closed to correspond with the nut operated upon, the adjustment being made by operating the screws 6 and 9 of the one part and the temper-screws 16 of the other. To remove the nut from the axle, the tongs being in line with the wrench proper, as at Fig. 1, and the adjustment of the jaws properly made, the engagement is made with said nut in the ordinary manner and the tongs revolved at right angles and moved forward to the limit of the slot 7 or to a position such as shown at Fig. 2 of the drawings. The tongs when in this position gives the necessary leverage to start the nut, after which said tongs are brought back to the first above-mentioned position and the nut removed by simply revolving the

wrench in an axial line. The nut when released from the axle remains confined within the jaws of the wrench until placed back in position.

5 By means of a wrench constructed and operated as described the labor of removing the nuts from vehicle-axles is expedited.

Various slight modifications and changes may be made in the details of construction without departing from the spirit of the invention. Therefore I do not wish to confine myself to the exact construction shown and described, but wish to claim all such modified forms as would come properly within the general scope of the invention.

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

1. The herein-described wrench, comprising the wrench proper formed in two parts, means for adjusting the parts toward or away from each other, tongs pivotally connecting the said parts, said tongs being provided with a means for adjusting the jaws toward and away from each other to adapt themselves to said adjustable wrench, as described.

2. The herein-described wrench adapted to operate on the nuts of vehicle-axles, comprising

ing the sectional wrench joined together by temper-screws 6 and 11 and intermediate tension-spring 3, in such manner that the sections may be adjusted toward or away from each other, tongs slidably connected to said sections by means of pivots 12 operating in slots 7, whereby said tongs may be arranged in line or at right angles with said wrench, said tongs being joined together by means of an adjustable pivot, as and for the purpose described.

3. In combination with an adjustable sectional wrench such as described, the tongs and means for pivoting the same to said wrench, said tongs being coupled together by means of a bolt firmly attached to the one tang and arranged through a slot 15 formed in the other, and suitable temper-screws 16 operating at either end of said slot and against the said pivot to hold the same in various positions, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY D. AUPKE.

Witnesses:

R. A. SAINT,
CHAS. E. AUPKE.