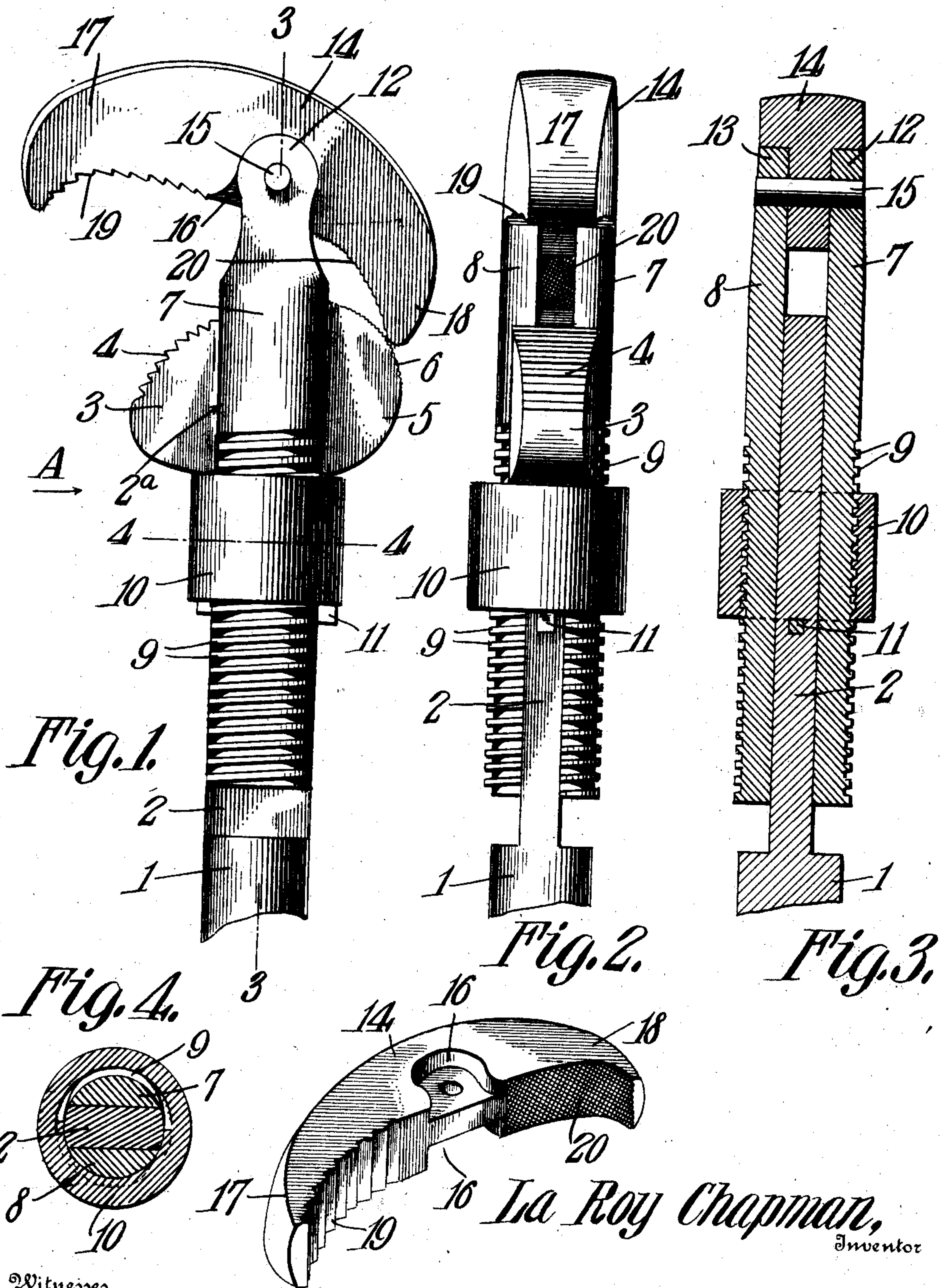


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LA ROY CHAPMAN.
WRENCH.

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UNITED STATES PATENT OFFICE.

LA ROY CHAPMAN, OF BERWIND, COLORADO.

WRENCH.

No. 883,168.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LA ROY CHAPMAN, a citizen of the United States, residing at Berwind, in the county of Las Animas and State of Colorado, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches; and has for its object to provide a strong, simple and thoroughly efficient implement designed especially for a pipe wrench and having duplex jaws.

The outer member of each jaw is formed on opposite ends of a head pivotally mounted between threaded plates, slidable on each side of a flat plate continuous with the handle of the wrench; and moved by a rotatable nut. The construction of the wrench is such that all strains engendered by operating the same are taken by the stronger and firmer parts, leaving the nut and thread free from stress.

With this and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter described, and pointed out in the claims, and illustrated in the accompanying drawing, in which

Figure 1 is a side elevation of the wrench. Fig. 2 is an elevation view at a right angle to Fig. 1 in the direction of the arrow A. Fig. 3 is a central longitudinal sectional view on the line 3—3 of Fig. 1. Fig. 4 is a cross sectional view on the line 4—4 of the same figure. Fig. 5 is a perspective view of the pivoted double jaw.

Similar numerals of reference are used for the same parts on all the figures.

The handle 1 of the wrench is preferably cylindrical in form, of any length desired, and made of metal, the upper end of which terminates in a flat plate 2 extending in the axial line of the handle, its width being the same as the diameter of the handle and its thickness about one-third thereof. At the end of the flat plate 2 and on each edge thereof is a curved projection thicker than the flat plate 2, the two projections forming fixed jaws separated on each side of the plate 2 by a channel or slot 2^a, one jaw 3 having prominent parallel transverse teeth 4 on its outer edge and the other jaw 5 provided on its like edge with a roughened surface 6.

7 and 8 indicate threaded plates situated on opposite sides of the flat plate 2, each threaded plate having an inner flat surface in contact with the respective side of said flat

plate and an outer curved side, the radius of which is the same as that of the handle 1, joining the flat side at the edges of the flat plate 2, as clearly shown in Figs. 1 and 4. On the curved surfaces of the plates 7 and 8 are a plurality of slightly inclined ribs which together form a screw thread, reaching from the lower ends of said plates to and beyond the centers thereof. A nut 10 is rotatably mounted on the threaded plates 7 and 8 and held against endwise movement by a wedge or pin 11 seated in a hole in the plate 2 below the nut and projecting beyond each edge thereof, the pin holding the nut against the lower edges of the fixed jaws 3 and 5. When the nut 10 is turned, the threaded plates are moved endwise along the flat plate 2, the direction of movement depending on the direction in which the nut is turned. If the pin 11 be withdrawn, the nut can be removed by unscrewing it and slipping it over the handle, the threaded plates and the movable jaws also may then be disconnected.

The threaded plates 7 and 8 slide in the channels or slots 2^a between the fixed jaws 3 and 5, their outer ends projecting beyond said jaws and support between them a head 14, intermediately pivoted to said ends 12 and 13 by a pin 15. The heads of the threaded plates 7 and 8 are curved on the axis of the pin 15 and seated in similarly shaped recesses 16 in the pivoted wrench head 14, as indicated in Figs. 1 and 5. The wrench head 14 is provided with two jaws 17 and 18 one at each end of the head. The jaw 17 has transverse teeth 19 on its under side and coacts with the fixed jaw 3, the other jaw 18, shorter than the jaw 17, has its under surface roughened at 20 and coacts with the fixed jaw 5. As thus constructed, the movements of the threaded plates 7 and 8, heretofore described, increase and decrease the space between the fixed and movable jaws, so as to grip pipes of different sizes, and having a pivoted mounting, the jaws are self-releasing. The handle, the flat plate 2, and the fixed jaws 3 and 5 are integrally formed and can be economically and rapidly made by forging with a minimum of machine work; the threaded plates may also be forged complete and, if necessary, the threads thereon may be machine finished. It is to be noted that in this wrench there are no sockets nor interior openings to be constructed and finished, everything being on the outside. The channels 2^a between the jaws guide the thread-

ed plates 7 and 8 and receive the strain when the wrench is in operation. The implement as a whole is a strong, useful, simple and convenient tool.

5 I claim:—

1. A wrench comprising a handle, a flat plate continuous therewith having fixed jaws on its outer end, a slidable threaded plate on each side of said flat plate, a nut mounted on
10 said threaded plates for moving them in unison, and a head pivoted between the outer ends of said threaded plates having a jaw at each end.

2. A wrench comprising a flat body plate
15 having oppositely disposed fixed jaws on its outer end thicker than said plate, a threaded plate slidable on each side of said flat plate and guided by a channel between said jaws, a nut for moving said threaded plates, and a
20 head intermediately pivoted between the ends of said threaded plates having a jaw on each end.

3. A wrench having a fixed jaw and a movable jaw, a flat plate narrower than said fixed
25 jaw and integral therewith, a plate having an outer curved threaded face and a flat face slidable on each side of said flat plate and pivotally supporting said movable jaw, and a nut for moving said threaded plates.

4. A wrench having a double fixed jaw and
30 a double movable jaw, a flat plate narrower than said fixed jaws and connected thereto, a plate having an outer curved threaded face and an inner flat face slidable on each side of said flat plate and guided by a channel be-
35 tween said fixed jaws and pivotally supporting said movable jaws, a nut mounted on said threaded plates and bearing against the under side of the jaws, and a removable pin extending through said flat plate below said nut.
40

5. A wrench having a flat body plate with a fixed jaw on each edge at one end, said jaws being thicker than the plate and forming a channel between them, a plate having a
45 curved face with inclined ribs and a flat face joining said curved face slidable on each side of said flat plate, a head pivoted to the upper ends of said ribbed plates having a jaw on each side adapted to engage with the fixed jaws, and a nut engaging said inclined ribs
50 to move the pivoted head.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LA ROY CHAPMAN.

Witnesses:

JAS. T. McDERMOTT,
BEN JOHNSON.