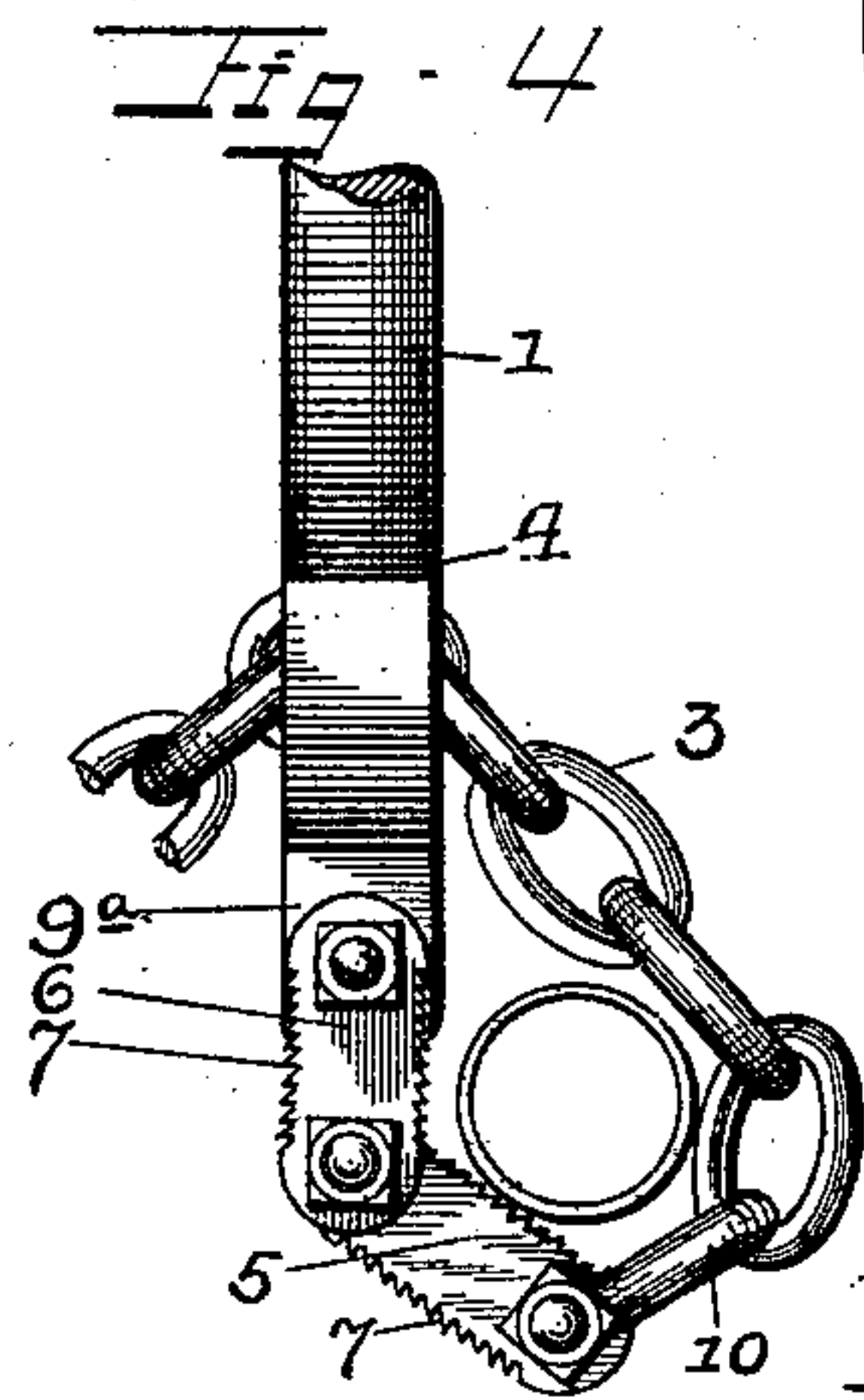
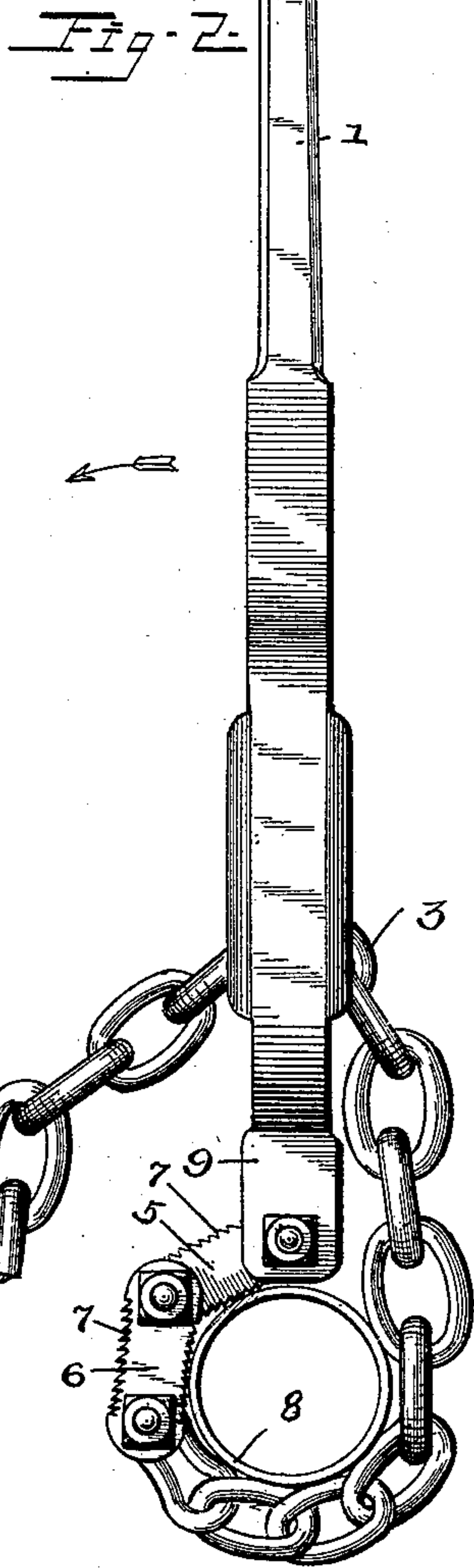
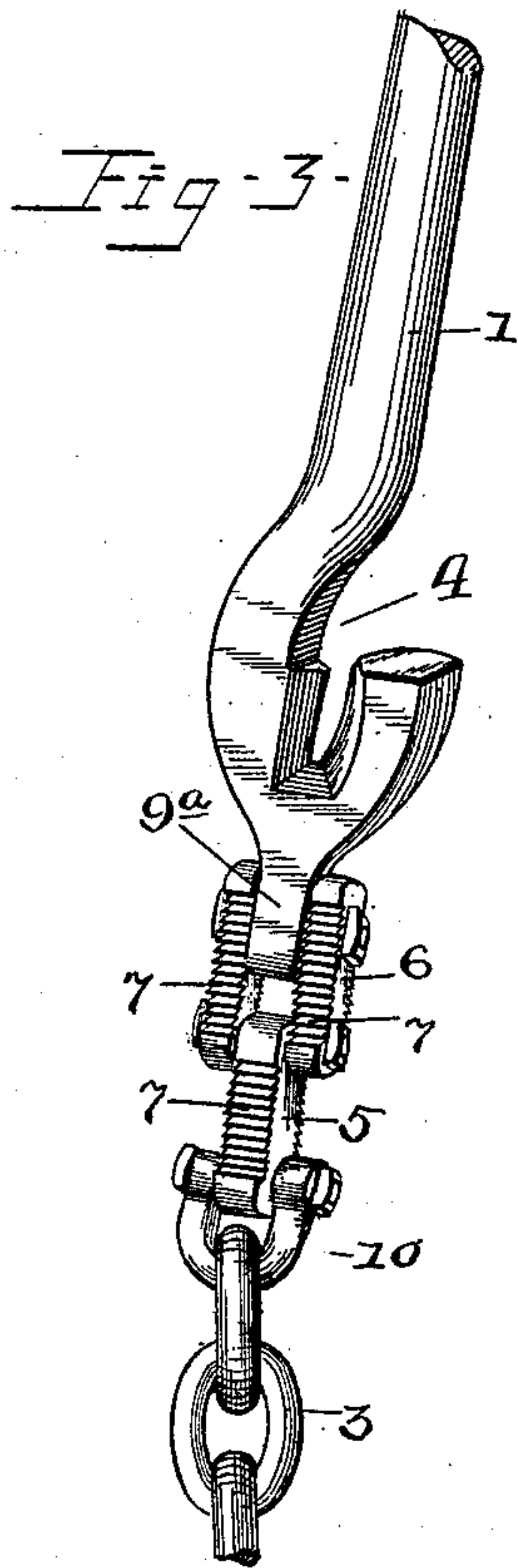
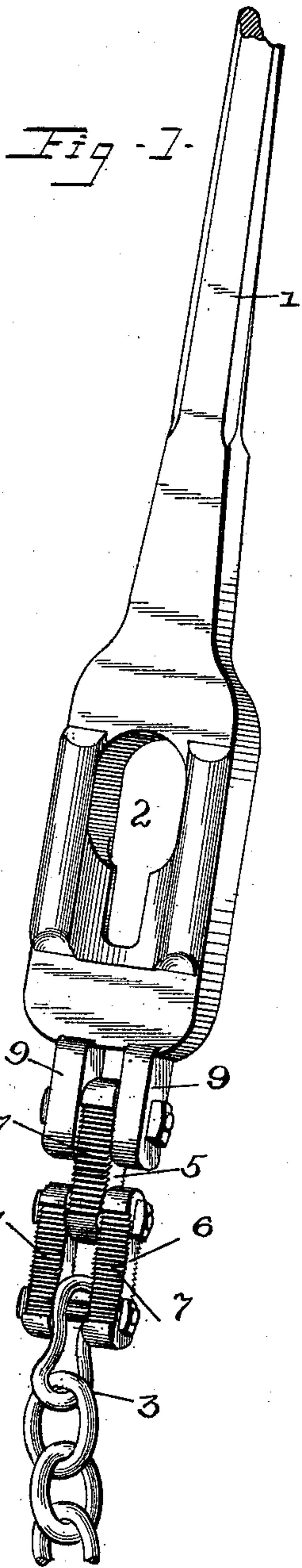


(No Model.)

R. A. RYRIE.  
PIPE WRENCH.

No. 594,563.

Patented Nov. 30, 1897.



Witnesses

*C. J. Youngs*  
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Inventor:-

*Robert A. Ryrie,*



# UNITED STATES PATENT OFFICE.

ROBERT A. RYRIE, OF CAMDEN, NEW JERSEY.

## PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 594,563, dated November 30, 1897.

Application filed September 15, 1897. Serial No. 651,760. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT A. RYRIE, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Pipe-Wrench, of which the following is a specification.

The invention relates to improvements in pipe-wrenches.

10 The object of the present invention is to improve the construction of pipe-wrenches and to provide a simple, inexpensive, and efficient device adapted to grip effectively a pipe or other cylindrical object and capable of clamping the same proportionately to the rotary strain exerted on it.

20 A further object of the invention is to provide a reversible pipe-wrench which will always be ready for use as it is picked up without reversing it to suit a pipe and which will be capable of convenient adjustment in applying it to and removing it from pipes of different diameters.

25 Another object of the invention is to provide a pipe-wrench which will firmly grip a pipe when a rotary strain is applied and which will instantly release the same when the strain ceases and the device is moved in the opposite direction, thereby obviating all liability of the wrench becoming jammed on a pipe and requiring force to remove it.

30 The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

35 In the drawings, Figure 1 is a perspective view of a wrench constructed in accordance with this invention and showing the same when not in use. Fig. 2 is a side elevation of the same, showing the wrench applied to the pipe. Fig. 3 is a view similar to Fig. 1, illustrating a modification of the invention. Fig. 4 is a side elevation, the chain being 45 slack and showing the arrangement of the parts in applying the wrench to a pipe or rod.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

50 1 designates a bar, preferably constructed of cast-steel, forming a lever and provided

near one end with a chain-engaging opening 2, having an enlarged upper portion and a narrow or constricted lower portion adapted to engage a link of an ordinary chain 3. The opening 2 may be constructed as illustrated in Fig. 1 of the accompanying drawings, when great strength is desired for heavy work; but the bar may, as illustrated in Fig. 3 of the drawings, be provided at one side with an opening or entrance 4 to facilitate engaging the chain with and disengaging it from the narrow portion of the opening. This construction, which is designed for the lighter class of wrenches, enables them to be rapidly adjusted to pipes of different diameters.

The chain 3 is connected with the bar 1 by link-bars 5 and 6, provided at their opposite edges with shouldered teeth 7, and forming-dogs for engaging a pipe 8 or other round object. The link 5 has one end pivoted between the links 6, which are arranged parallel, and its other end is similarly connected to a pair of lugs or ears 9, which receive the link 5 between them and extend from the end of the bar longitudinally thereof.

The pivots of the link-bars, which are straight, consist of bolts or other suitable fastening devices. The pair of ears 9 of the bar 1 provide for great strength and the arrangement of the link-bars may be reversed to bring them to the position illustrated in Fig. 3 of the accompanying drawings. In this figure the pair of links 6 is pivoted to the bar which is provided with a single ear 9<sup>a</sup>, and the single link-bar 5 is pivoted to the outer ends of the pair of link-bars and arranged between the same, as shown.

The chain 3 is pivoted between the outer ends of the links 6 in the form illustrated in Figs. 1 and 2 of the drawings, and a shackle 10 is employed when the chain is connected to the single link.

The wrench is reversible, being adapted to be used in the manner in which it is picked up by the operator, and when it is in engagement with a pipe the latter, as illustrated in Fig. 2 of the drawings, is located at the adjacent end of the bar, which is disposed in line with the adjacent diameter of the said pipe. The pipe is firmly gripped when the



- handle portion of the bar is moved in the direction of the arrow or toward the side where the straight link-bars are located, and when moved in the opposite direction the pipe is  
5 readily released, as illustrated in Fig. 4 of the accompanying drawings. An eccentric clamping action is produced and the gripping power of the wrench is proportionate to the strain exerted by the bar or lever.
- 10 The invention has the following advantages: The wrench is simple and comparatively inexpensive in construction. It is adapted to be readily applied to a pipe or other cylindrical object and is capable of ready adjustment to  
15 suit the diameter of the same. Its gripping and releasing action is instantaneous and it cannot become jammed upon a pipe and require force to remove it. It has an eccentric gripping action which is in proportion to the  
20 strain exerted by the bar or lever, and it cannot possibly slip on a pipe or rod. The wrench is applied to a pipe or rod when the chain is slack and the parts are similarly arranged in removing the wrench.
- 25 Changes in the form, proportion, and minor details of construction may be resorted to

without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

A pipe-wrench comprising a bar provided 30 with a chain-engaging opening and having a longitudinal ear at one end and adapted to receive a pipe or rod centrally of the latter, the reversible link-bars pivoted together and to said ear, provided at their opposite edges 35 with teeth and forming dogs for engaging a pipe or rod, and a chain having one end connected with the link-bars and adapted to engage the opening of the bar at either side thereof, said link-bars and chain being adapted 40 to grip a pipe or rod when the bar is moved in one direction, and capable of instantly releasing the same when the bar is moved in the opposite direction, substantially as described. 45

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

ROBT. A. RYRIE.

Witnesses:

JOHN H. SIGGERS,  
ROBT. E. CRUMP.