

(No Model.)

J. H. NEWELL.
CHAIN PIPE WRENCH.

No. 551,399.

Patented Dec. 17, 1895.

Fig. 1.

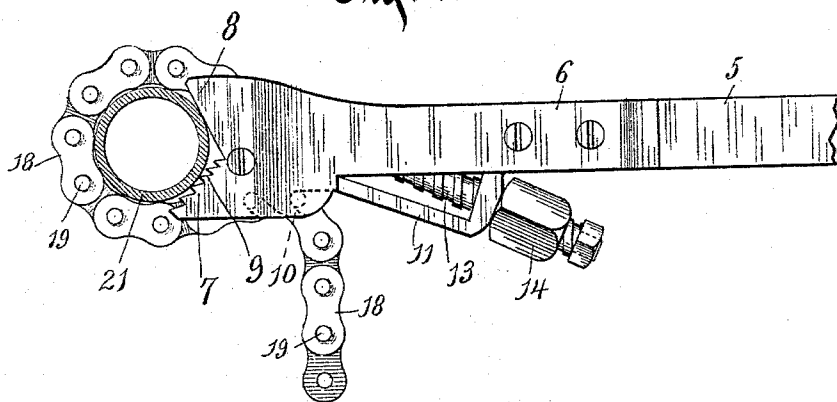


Fig. 2.

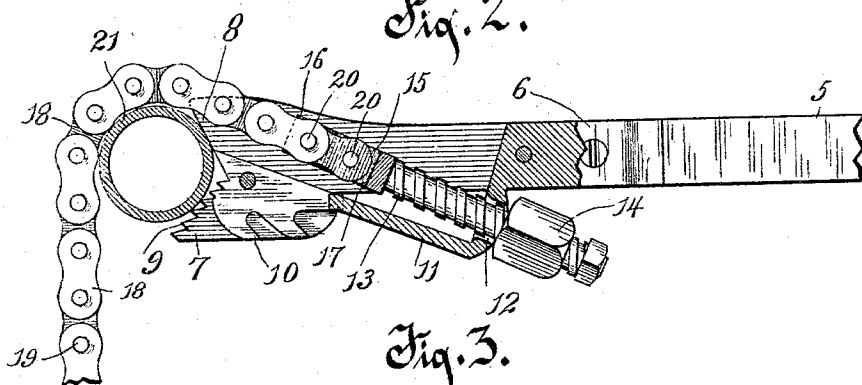


Fig. 3.

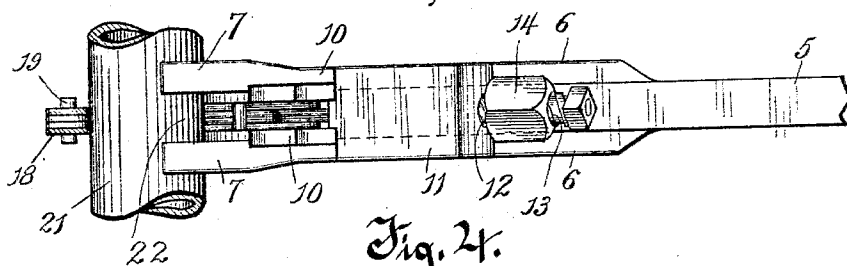
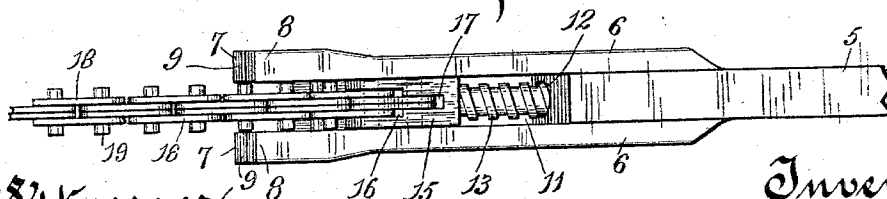


Fig. 4.



Witnesses.

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CHAIN PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 551,389, dated December 17, 1895.

Application filed May 17, 1895. Serial No. 549,629. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. NEWELL, of Hurley, in the county of Ashland and State of Wisconsin, have invented a new and useful
5 Improvement in Chain Pipe-Wrenches, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to that class of
10 devices known as "chain pipe-wrenches."

The invention consists more particularly in certain improvements upon the device described and claimed in Letters Patent of the United States issued to me on September 18,
15 1894, and numbered 526,047, the object of which improvements will be hereinafter particularly pointed out.

In the accompanying drawings, Figure 1 is an elevation of my improved pipe-wrench,
20 showing the chain as gripping a pipe and the free end of said chain in engagement with the rigid hooks. Fig. 2 is a sectional view of Fig. 1, showing the free end of the chain as released from the hooks. Fig. 3 is an under
25 view of the wrench, and Fig. 4 is a plan view thereof.

Like numerals of reference denote like parts throughout the several views.

Referring to the drawings, the numeral 5
30 indicates a hand-lever, to one end of which is attached, by means of screws or equivalents, the side pieces 6 6, parallel with each other in the plane in which the wrench swings and constituting a bifurcated foot portion. Each
35 side piece terminates in a heel projection 7 and a toe projection 8, which extend symmetrically on opposite sides of the longitudinal axis of the lever. Said heel projections are formed or provided with the customary
40 teeth or serrations 9, adapted to bite the pipe during the stroke of the lever. Each side piece 6 is provided upon its under edge, just back of the heel projection 7, with rearwardly-curved hooks 10. Beneath the bifurcated
45 foot portion is secured a boxing 11, the rear upwardly-extending end thereof provided with an opening 12 for the passage therethrough of a take-up device 13. This take-up is threaded throughout the greater portion of its length,
50 and on the outer end of the threaded portion is a take-up nut 14. The inner end of the take-up terminates in a headed portion 15,

which is provided with an open-ended longitudinally-disposed recess, said recess consisting of an outer wide portion 16 and an inner
55 narrower portion 17. The take-up extends across the longitudinal axis of the lever, and its headed portion, as will be seen, is disposed in the slot formed between the parallel side pieces 6 6, the parallel sides of the headed
60 portion coacting with said parallel sides of the side pieces.

I prefer to employ in connection with my improved wrench the specific form of chain shown in the accompanying drawings, said
65 chain consisting of edge-opposing flat links 18 and transverse pintles 19, and the ends of a sufficient number of pintles at the free end of the chain project so as to engage with the
70 hooks 10. A chain of this construction is ordinarily used. It is obvious, however, that other forms of chain may be employed and successful results secured. The inner end of the chain is connected to the headed portion
75 of the take-up. The smaller width of links enter the contracted recess 17, while the wider links fit in the enlarged portion 16 of the recess, both sets of links being secured by means of transverse rivets 20 20.

In operation the chain is passed around the
80 pipe, (indicated by the numeral 21,) and the projecting pintles at the free end of said chain are made to engage with the hooks 10. The nut 14 is now turned with the fingers for the purpose of tightening the chain sufficiently
85 to limit lost motion to the minimum on the working stroke of the lever, on which stroke the teeth or serrations engage the pipe, and on the reverse or back stroke of the lever permitting said teeth or serrations to clear the
90 pipe.

It will be noticed that the space between the heel projections 7, as indicated at 22, is somewhat wider than the space between the
95 hooks 10 to the rear thereof. It is, of course, obvious that the hooks should be as thick as possible so as to afford them the greatest possible amount of strength, and hence the narrow space between the same. Yet if the
100 metal composing the heel projections were of the same thickness as the thickness of the metal of the hooks, it would so narrow the space between said heel projections as to result in a serious disadvantage—i. e., the width

being diminished to such an extent as to prevent the entrance therein of the links of the chain and their projecting pintles. When the wrench is required to operate upon pipes of very small diameter, it is apparent that the links and the projecting pintles must pass into the space between the heel projections, as otherwise a pipe of small diameter could not be tightly embraced by the chain on account of said chain contacting with the ends and edges of the heel projections before being able to engage the hooks.

In my Patent No. 526,047, dated September 18, 1894, hereinbefore referred to, one end of the chain was shown as secured upon a transverse pin between the side pieces of the foot, while the pintles at the free end of the chain were shown as engaging hooks formed at the end of the take-up. In practice, this form of construction has been found open to objection, in view of the fact that when it is desired that the chain should engage a pipe arranged overhead and horizontally, if the handle is held up vertically in the proper position, and the free end of the chain is swung around the pipe, the take-up will invariably drop by gravity, making it necessary for the operator to push the same upwardly, and hold it in that position for proper engagement therewith of the end of the chain. In the improved construction covered by the present application for patent, however, this difficulty is obviated in a simple manner, as, from the fact that one end of the chain is connected to the headed portion of the take-up, and the free end is adapted to engage hooks projecting from the side pieces, that when the wrench is used in the manner just described, the very fact of throwing the free end of the chain over the overhead horizontally-arranged pipe will cause the take-up to be held properly up to place.

In the form of construction covered by the Letters Patent hereinbefore referred to the metal composing the side pieces of the foot was necessarily required to be of diminished width, so as to permit of the hooks of the take-up projecting out laterally beyond the edges of said side pieces in order to be engaged by the pintles of the chain when said chain embraces a pipe of small diameter. This decreased width of the side pieces necessarily detracts from the strength of the wrench. In the present improvement it is apparent that the side pieces are not restricted to any particular width, as the hooks are formed on the edges of the side pieces, and consequently said hooks are capable of being engaged by the pintles of the chain, when said chain is engaging pipes of small diameter as well as of large diameter.

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

1. In a chain pipe wrench, the combination, of a hand-lever provided at its end with jaws adapted to engage the pipe, said jaws formed or provided with projecting hooks, a non-rotary take-up, a rotary nut fitted to the screw end of said take-up, and a chain having one end secured to the take-up and its free end adapted to engage the hooks, substantially as set forth.

2. In a chain pipe wrench, the combination, of a hand-lever provided at its end with jaws adapted to engage the pipe, said jaws formed or provided with projecting hooks, a non-rotary take-up formed at one end with a headed portion having a recess therein, the inner end of said recess being reduced, a rotary nut fitted to the screw end of the take-up, and a chain consisting of a series of edge-opposing links, and connecting pintles, the innermost link or links at one end fitting the contracted portion of the recess of the headed portion of the take-up, and the parallel links connected to said first-mentioned link or links fitting the widened portion of the recess, said respective links held in the recess by rivets, and the free end of the chain adapted to engage the hooks, substantially as set forth.

3. In a chain pipe wrench, the combination, of a hand-lever formed or provided at one end with a foot portion comprising parallel side pieces with a space therebetween, said side pieces provided with projecting hooks, a boxing, a non-rotary take-up passing through the boxing and entering the space between the side pieces, a rotary nut fitted to the screw end of said take-up, and a chain having one end secured to the take-up and its free end adapted to engage the hooks, substantially as set forth.

4. In a chain pipe wrench, the combination, of a hand-lever formed or provided at one end with a foot portion comprising parallel side pieces with a space therebetween, said side pieces having edge-projecting hooks, and end heel projections, the space between said heel projections being greater than the space between the hooks, a non-rotary take-up, a rotary nut fitted to the screw end of said take-up, and a chain having one end secured to the take-up, and its opposite end provided with projecting pintles adapted to engage the hooks, substantially as set forth.

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

JOHN H. NEWELL.

Witnesses:

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