

No. 776,873.

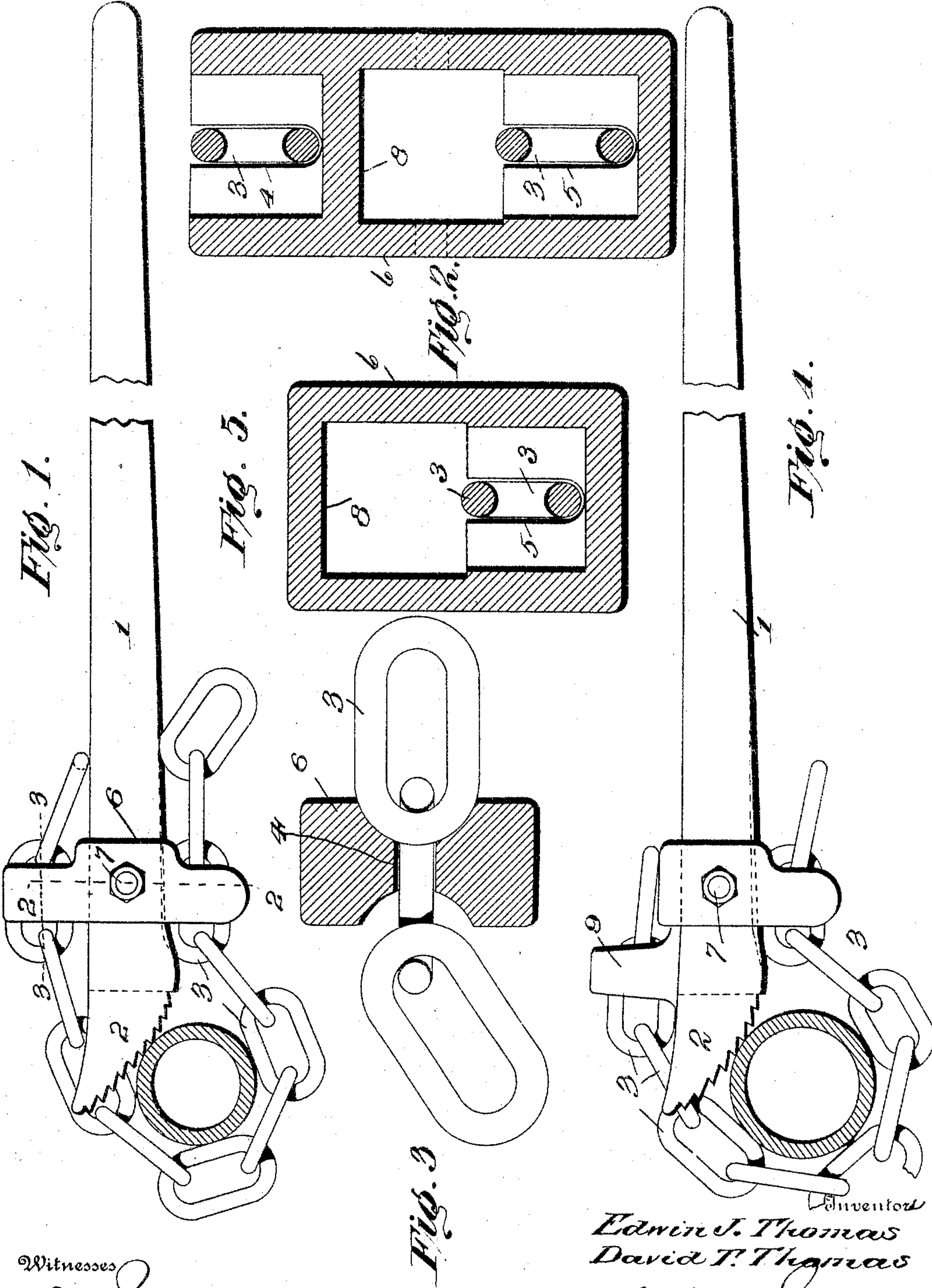
PATENTED DEC. 6, 1904.

E. J. & D. T. THOMAS.

WRENCH.

APPLICATION FILED MAY 5, 1904.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

EDWIN J. THOMAS AND DAVID T. THOMAS, OF WARREN, OHIO.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 776,873, dated December 6, 1904.

Application filed May 5, 1904. Serial No. 206,510. (No model.)

*To all whom it may concern:*

Be it known that we, EDWIN J. THOMAS and DAVID T. THOMAS, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Wrenches; and we do hereby 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.

Heretofore in that class of tongs or wrenches employing chains looped around one end of the wrench-arm so as to encircle the object upon which the tool is to operate the lower branch of the chain has usually been secured by a hook or eyebolt, with the result that in the event of any breakage it is necessary to send the tool to the blacksmith for repairs.

The object of our invention is to avoid this expense and delay, the use of a hook or eyebolt being dispensed with and in lieu thereof simple and highly-efficient means being employed for allowing a ready and easy adjustment of the chain as well as the secure holding of the latter at each end.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation. Fig. 2 is a cross-section on line 2 2, Fig. 1. Fig. 3 is a horizontal sectional view on line 3 3, Fig. 1, showing some of the chain-links. Fig. 4 shows in side elevation a slight modification. Fig. 5 is a detail thereof.

Referring to the drawings, 1 designates the wrench-arm, which, as is usual in this class of devices, has a curved toothed end 2 for engaging the object to be operated upon. Looped around this end—that is, extended outwardly over and back thereunder—is a chain 3, which according to our invention has a readily-detachable connection with the wrench-arm on opposite sides thereof. According to the form shown in Figs. 1, 2, and 3 this is effected by passing opposite links of the chain through vertical jaws or slots 4 and 5, formed in a block 6, removably secured on the arm by a nutted bolt 7. Speaking more specifically, the vertical slot 4 is formed

at the transverse center of the top of the block and is open at its outer end. The two faces of the block at right angles to the slot are concaved to accommodate the rounded ends of the adjacent links, so as to permit of a limited play of the chain. The slot 5 extends downwardly from the central opening 8, through which arm 1 is passed, the side faces adjacent this slot being likewise concaved. The under face of arm 1 is preferably somewhat cut away to accommodate the lower vertically-disposed link fitted in slot 5.

In practice before the block is positioned on the wrench-arm one of the links is placed within the lower slot 5 and the block is then secured in place, such link being thereby firmly held as against displacement. The chain is then looped around the toothed end of the arm and another vertically-disposed link is placed in slot 4. Thus it will be seen that the chain may be readily secured at any desired point of its length and that in the event of any break occurring it is only necessary to remove the block and then replace it on the wrench-arm after again adjusting the chain in the lower jaw. Slipping of the chain is prevented, since the retaining-jaws in which the vertically-disposed links are located act as stops for the adjacent horizontal links.

It is obvious that our invention is capable of considerable modification. For instance, as shown in Figs. 4 and 5, the removable block may be provided with but one slot or jaw for engaging and holding the lower branch of the chain, the upper portion thereof engaging with a vertically-slotted lug or jaw 9, formed integral with the upper surface of the wrench-arm. In both arrangements it will be noted that the lower lap or branch of the chain is held in place between the removable block and the under face of the arm and that aside from the adjustment permissible by the ready removal of the upper branch from its retaining-jaw the chain may likewise be adjusted by the mere removal and the replacement of the block. The latter is less liable to be broken or damaged than an ordinary hook or an eyebolt, and in the event of any injury to the block a new one may be readily substituted.



We claim as our invention—

1. A wrench comprising an arm, a chain looped around one end thereof detachably held at one end, and a block removably secured on  
5 said arm and between which arm and the block the other end of the chain is held.

2. A wrench comprising an arm, a chain looped around one end thereof detachably held at one end, a block having an opening for said  
10 arm and a slot extending outwardly from the opening to accommodate a link of the chain to hold the latter between the block and the arm.

3. The combination with the arm having a  
15 pipe-engaging end, of the chain having two laps forming a loop around said end, and the removable block located on the arm near said end and having upper and lower slots through which the upper and lower laps of the chain  
20 are respectively passed, the walls of said slots holding said laps at the desired points of the lengths of the latter.

4. The combination with the arm having a pipe-engaging end, of the chain having two  
25 laps forming a loop around said end, and the removable block located on the arm near said end and having upper and lower slots, said upper slot being open at its outer end and said lower slot open at its inner end, said slots being  
30 designed to accommodate respectively the upper and lower laps of said chain at any points of the lengths thereof, whereby said lower lap will be held between said arm and said block.

35 5. The combination with the arm having a pipe-engaging end, of the chain forming a loop

around said end, and the removable block having an opening for said arm, and slots above and beneath said opening, the upper slot being open at its outer end and the lower slot  
40 intersecting said opening for the arm, said slots being designed to accommodate the laps of said chain and hold them at any points of their lengths.

6. The combination with the arm having a  
45 pipe-engaging end, of the chain, and the removable block having an upper slot, a central opening for said arm, and a lower slot extending from said opening, said slots being designed to accommodate links of the chain  
50 passed around the pipe-engaging end of the arm, said block being located on the arm near said end.

7. The combination with the arm having an opening near its pipe-engaging end, of a block,  
55 a bolt passed through said block and opening, and a chain, said block having slots on opposite sides of said arm to accommodate links of the chain, and concaved on opposite faces to accommodate the ends of adjacent links, said  
60 chain being passed around the pipe-engaging end of the arm, and held in one of said slots by such arm.

In testimony whereof we have signed this specification in the presence of two subscrib-  
65 ing witnesses.

EDWIN J. THOMAS.  
DAVID T. THOMAS.

Witnesses:

FRANK S. CHRYST,  
JOHN R. LAEHMAN.