March 9, 1926. 1,576,258

F. W. TRABOLD

WRENCH

Filed Sept. 18, 1924 2 Sheets-Sheet 1

Fig. 1.

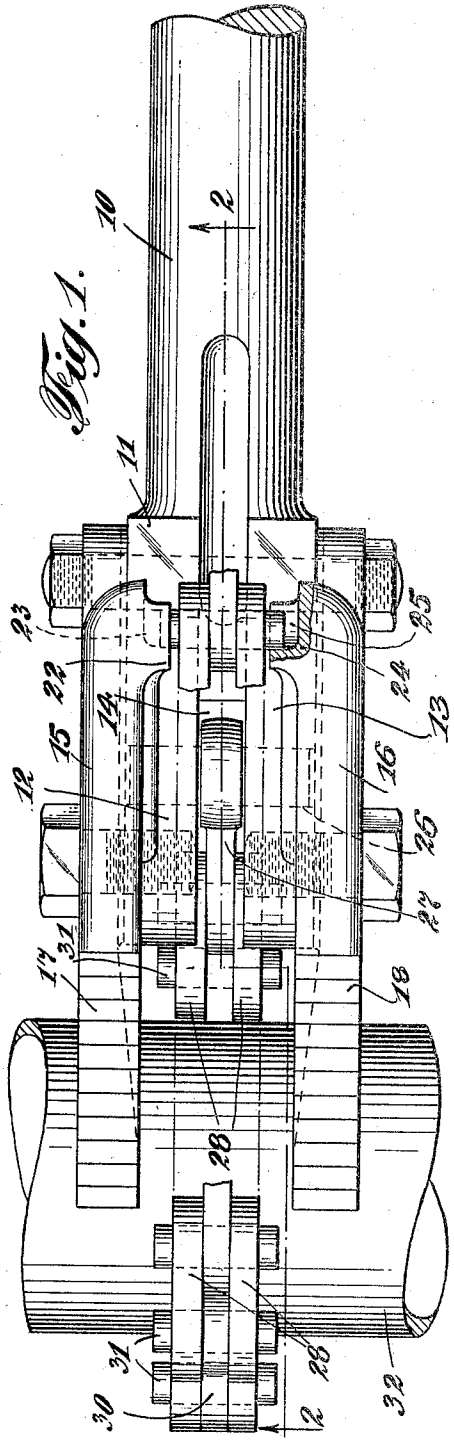
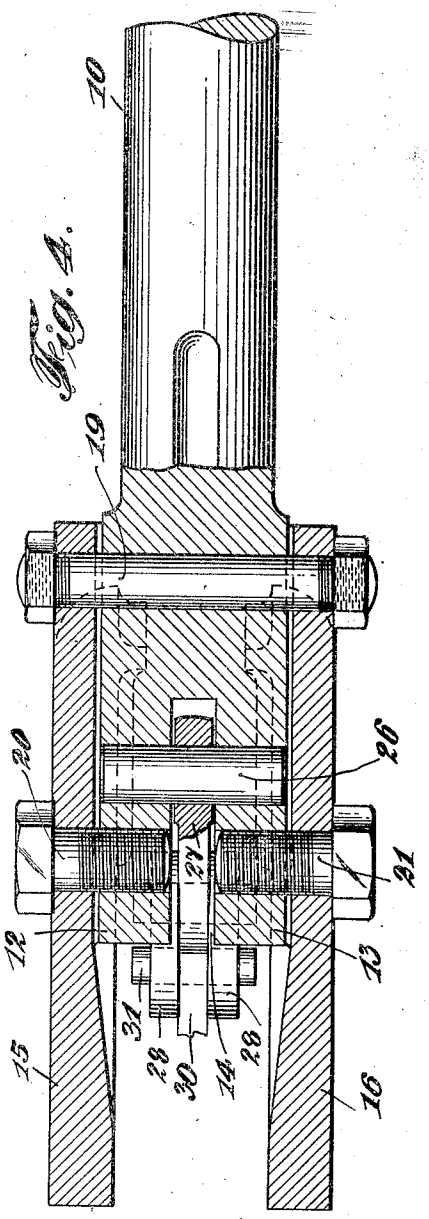


Fig. 4.



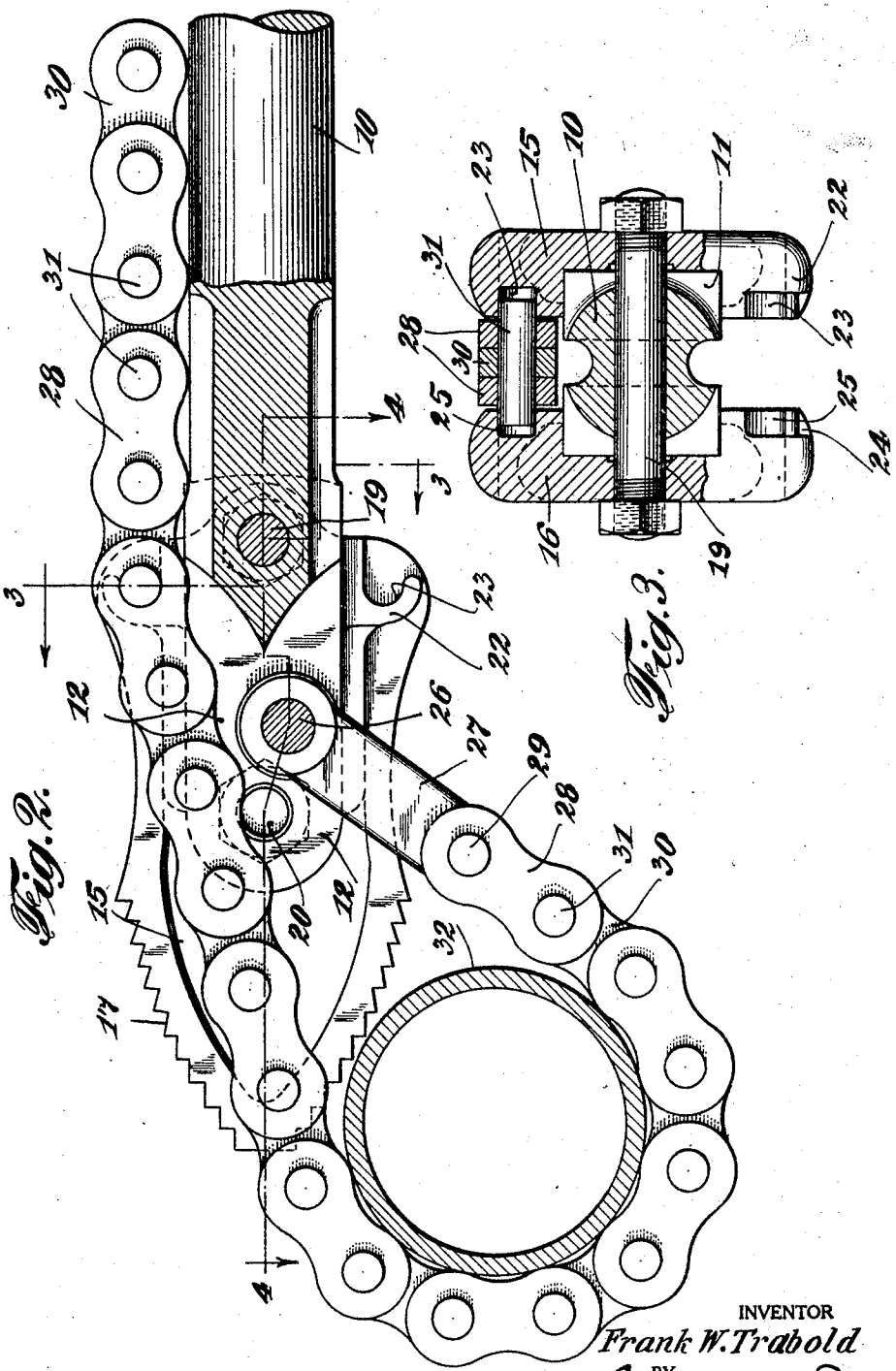
INVENTOR
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March 9, 1926. 1,576,258

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WRENCH

Filed Sept. 18, 1924 2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

FRANK W. TRABOLD, OF MARION, INDIANA.

WRENCH.

Application filed September 18, 1924. Serial No. 738,354.

To all whom it may concern:

Be it known that I, FRANK W. TRABOLD, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented an Improvement in Wrenches, of which the following is a specification.

My present invention relates to an improvement in wrenches and more particularly to pipe wrenches of the chain type in which the jaws of the wrench are detachably secured to the handle thereof. So far as I am aware, it has been customary heretofore in wrenches of this type, to pivotally connect the chain member to the device or devices by which the jaws are attached to the handle. In this construction as will be understood, the strains placed upon the chain in the use of the wrench tend to cause the jaws to loosen and separate, thereby permitting the chain member to slip, making serious accidents possible. Also heretofore, so far as I am aware in wrenches of this type, it has been customary to pivotally connect the chain member in a position which is substantially in the longitudinal center of the handle and the jaw members connected thereto. This obviously brought the wear in similar positions on opposite sides of the jaw members when used on pipes of the same diameters, and also made it difficult to adjust the wrench to use on pipes of different diameters.

I am also aware that heretofore in the manufacture of chain wrenches the chain has been connected to the handle in a position offset from the longitudinal center of the handle, but in such instances so far as I am aware the use of the wrench so constructed is limited to the employment of the teeth of the jaws on the same side of the wrench as that in which the chain is connected, and that in order to make it possible to use the teeth in the other side of the jaw it is necessary to also connect the chain at the other side of the axis of the handle of the wrench.

The object of my present invention is to overcome these difficulties and disadvantages. In so doing, the chain member of the wrench made in accordance with my invention is pivotally mounted to the handle member in such a manner as to make the connection entirely independent of the devices by which the jaw members are connected to the handle, and furthermore, the connection by which the chain member is pivotally connected to the handle is offset from the longitudinal center of the handle and jaw members, whereby in use on the same size pipe the position of the chain and jaws may be reversed causing the jaw members to bite the pipe at different oppositely disposed positions instead of at the same oppositely disposed positions, thereby making it possible to adjust the wear on the teeth of the jaw members and furthermore making it possible to effect a closer adjustment of the wrench to efficiently engage pipes of such diameters as otherwise it might be impossible to properly grip with the wrench.

These features will be hereinafter more particularly described in conjunction with the accompanying drawings, in which

Figure 1 is a plan of a wrench made in accordance with my present invention,

Fig. 2 is a sectional elevation on line 2—2 of Fig. 1,

Fig. 3 is a transverse section on line 3—3 of Fig. 2, and

Fig. 4 is a sectional plan on line 4—4 of Fig. 2.

Referring to the drawing it will be seen that in carrying out my invention, the wrench comprises a handle member 10 made in the customary or any suitable manner, and at one end thereof the same is provided with a head 11, the extremity of which is bifurcated, providing for the spaced arms indicated at 12 and 13 and the intermediate space or slot 14.

The wrench includes the customary jaw members 15 and 16, each provided in the usual manner in oppositely disposed positions with series of teeth indicated at 17 and 18. The head member 11 of the handle adjacent the inner end thereof, is provided with a bore for a bolt 19 adapted to secure the jaw members at the inner ends thereof to the handle of the wrench. In approximately central positions the jaw members 15 and 16 are also provided with bolt holes, and the jaw member 15 is additionally secured to the arm 12 by a stud bolt 20 which is turned down in a tapped opening in this arm for this purpose. In like manner, the jaw member 16 is additionally secured to the head of the wrench by a stud bolt 21 which passes through the central opening in this jaw member and is turned down into a tapped opening provided for this purpose in the arm 13. Furthermore, at the inner ends

the jaw members are provided with devices for engagement with the pins of a chain for adjusting the chain to position for use. As illustrated, the jaw member 15 is provided with bosses 22 having sockets 23 therein, and the jaw member 16 with similar bosses 24 having corresponding sockets 25 therein, the corresponding sockets 23 and 25 being adapted as hereinbefore stated to receive one of the pins of the chain member to adjust the same to position for use.

The chain member is connected to the head of the handle in a manner making the same entirely independent of the devices for securing the jaw members in place. To this end, the arms 12 and 13 are provided in a suitable position preferably offset from the longitudinal center of the handle and the head thereof, with a pin or bolt 26 on which and between the arms 12 and 13 a link 27 is pivotally connected at one end. At its opposite end, the end links 28 of the usual wrench chain construction are pivotally connected as indicated at 29. The next succeeding link 30 is pivotally connected between the links 28 as indicated at 31, and as will be understood the chain of this construction or a similar construction may be provided in any necessary or desired length. A pipe around which the chain may be fitted is indicated at 32.

From the foregoing description, it will now be understood that the chain member of my improved wrench is pivotally connected to the handle thereof in a manner entirely independent of the connection of the jaw members thereto, so that the strains applied to the chain in the use of the wrench cannot possibly tend in any manner to loosen the jaws and permit the chain to slip. It will furthermore be understood that by virtue of the offset position in which the chain is pivotally connected between the arms of the head of the handle of the wrench, the wrench may be employed on pipes of the same size by reversing the position of the wrench in such a manner that the teeth of the jaws will not become worn in the same positions, and also by virtue of this offset pivotal connection the wrench may be adjusted to pipes of different diameters with which it would otherwise be impossible to obtain an efficient grip on the pipe; that is to say, in the use of the wrench with pipes of the same diameter the pipes will be gripped in one position on one side of the jaws and in another position on the other side of the jaws of the wrench, because the operative length of the chain is shorter when the pipe is gripped on the side at which the chain is connected in an offset position than it is when the pipe is gripped on the other side of the jaws of the wrench.

In the use of the wrench the chain is adjusted to place by fitting the projecting ends of any one of the pins connecting the links of the chain into the socket members provided for this purpose at the inner ends of the jaw members.

It will still furthermore be understood that the construction of the wrench may be varied within the terms of the appended claims without departing from the nature and spirit of my invention. In some instances, as will be apparent, the pin or bolt 26 to which the chain member of the wrench is pivotally connected may also be caused to pass through the jaw members to assist in maintaining the same in position at the end of the wrench handle, or other obvious and mechanical equivalent constructions may be employed.

I claim as my invention:

1. In a pipe wrench, a handle, gripper jaws, means for securing the gripper jaws in spaced positions to the said handle, a chain member, and means for pivotally connecting the chain member to the handle between the said jaws and independently of the means for securing the gripper jaws to the handle, and also in a position offset from the longitudinal axis of the handle, whereby in use with pipes of the same diameter the teeth of the jaws will be engaged in different positions on opposite sides of the jaws of the wrench.

2. In a pipe wrench, a handle having spaced arms at one end thereof, gripper jaws having toothed edges, means for connecting the gripper jaws to the spaced arms, a pin mounted in the spaced arms in a position offset from the longitudinal axis of the handle and independently of the means for securing the gripper jaws to the spaced arms, and a chain pivotally connected to the said pin, whereby in use with pipes of the same diameter the teeth of the jaws will be engaged in different positions on opposite sides of the jaws of the wrench.

Signed by me this 10th day of September, 1924.

FRANK W. TRABOLD.