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M. J. TULLY

DOUBLE WRENCH

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Fig. 1.

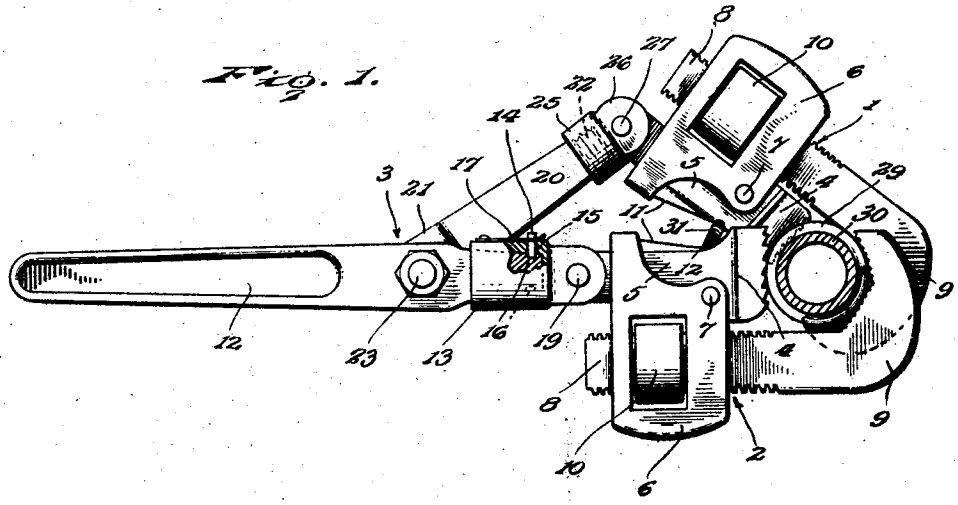
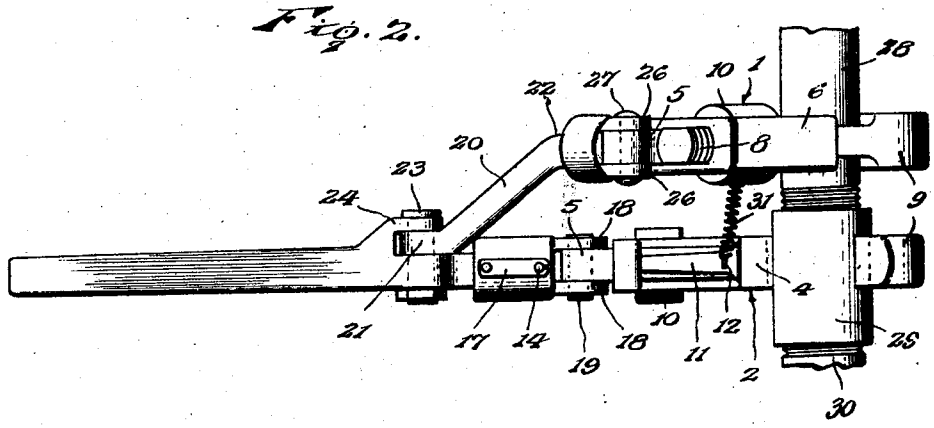


Fig. 2.



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DOUBLE WRENCH.

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This invention relates to wrenches and more particularly to a wrench adapted for use when connecting or disconnecting threaded pipe sections.

One object of the invention is to so construct the wrench that one pipe section or a coupling joining two pipe sections may be held stationary while another pipe section is screwed into engagement with the stationary pipe section.

Another object of the invention is to so assemble the elements constituting the wrench that movement of the operating handle in one direction will first cause the pipe-engaging elements to firmly grip the respective pipe sections engaged thereby and then cause turning motion to be applied to one pipe section while the other is held stationary.

Another object of the invention is to make it unnecessary to employ two separate wrenches when uniting or disconnecting threaded pipe sections.

Another object of the invention is to permit the pipe-engaging elements to have a conventional wrench construction.

This invention is illustrated in the accompanying drawing, wherein

Figure 1 is a view in side elevation showing the improved wrench in use, and

Fig. 2 is a top plan view of the improved wrench.

The companion wrenches or pipe-gripping elements which have been employed in the formation of the improved tool forming the subject-matter of this invention are indicated in general by the numerals 1 and 2 and are retained in operative relation to each other by actuating means indicated in general by the numeral 3. The wrenches 1 and 2 are of a duplicate construction and in the present illustration are in the form of Stilson wrenches. Each includes a stationary jaw 4, the shank 5 of which is shorter than in most wrenches of this type as it only needs to be of sufficient length to extend rearwardly beyond the yoke 6 which is pivotally mounted to the shank 5, as shown at 7, and receives the shank 8 of the movable jaw 9 and adjusting nut 10 for the movable jaw. The usual spring 11 is also provided with one end anchored to the shank of the statonary jaw by means of a fastener 12 having an eye at its outer end. The free end of the spring engages the yoke and yieldably retains the yoke in its normal position but permits of the necessary rocking movement to cause the teeth of the stationary and movable jaws to have firm gripping engagement with the pipe or coupling to be held or turned by the wrench.

The actuating means which operatively connects the two wrenches 1 and 2 includes a handle 12 which extends longitudinally of the shank 5 of the stationary jaw of wrench 2 and has its forward end portion fitted into a socket 13 and releasably held in the socket by means of a latch pin 14 slidably mounted in an opening 15 formed in the socket and yieldably held in position to enter a selected one of the sockets 16 formed in the forward end portion of the handle by a spring 17. Ears 18 extend forwardly from the socket upon opposite sides of the shank of the stationary jaw and are engaged with the protruding end portions of a pivot pin 19 passed transversely through the shank. It will thus be seen that the handle is pivotally connected with the stationary jaw of the wrench 2. A link 20 extends diagonally of the handle and has its end portions 21 and 22 offset to extend in opposite directions and parallel to each other. The end portion 21 is formed with a circular opening to receive the bolt or pivot pin 23 passed transversely through an opening formed in the forward end portion of the handle and also passed through a bearing 24 which projects from one side of the handle, as shown in Fig. 2. Since the head of the bolt engages the outer face of the bearing bracket 24, the securing nut of the pivot bolt may be tightened without a binding action being caused which would be liable to interfere with free swinging movement of the link. The forward end portion 22 of the link is threaded and is screwed into an internally threaded socket 25 which is pivotally connected with the shank of the stationary jaw of the wrench 1 by ears 26 disposed upon opposite sides of the shank of this jaw and engaged with the extended ends of a pivot pin 27.

When the improved tool is employed to connect pipe sections, it is applied as shown with the wrench 1 engaging the pipe section 28 and the wrench 2 engaging the coupling 29 into which the pipe section 28 is to be threaded. The coupling 29 has been shown in engagement with a pipe section 30, but it will be understood that the pipe section 28 could be screwed into an internally threaded end portion of another pipe section instead

of a coupling. After the wrenches have been applied as shown, the handle 12 is swung downwardly, and as this downward pressure is applied the handle has a tendency to rock upon the pivot 23 and thereby apply an upward movement to the shank 5 of the stationary jaw of the wrench 2. This causes the coupling 29 to be firmly gripped between the jaws of the wrench 2 and as further downward pressure is applied to the handle 12, the handle swings downwardly about the pivot 19. A drawing action will, therefore, be applied to the link 20 so that the jaw 4 of the wrench 1 is rocked into firm gripping engagement with the pipe section 28 and a rotary motion applied to the pipe section which will cause it to be screwed into the coupling. It will, of course, be understood that the pipe section 28 will be screwed into the coupling as far as it can by hand before the wrench is made use of. After the handle has been swung downwardly as far as possible, it is swung upwardly and the wrench 1 will be released from its gripping engagement with the pipe section and will turn freely about the pipe section until the handle has been swung upwardly to preferably a substantially vertical position. The handle will then again be swung downwardly to effect a second gripping and turning of the pipe section. This is repeated until the pipe section has been screwed into the coupling the necessary extent. The spring 31 which extends between the wrenches 1 and 2 and is secured at its ends to the eyes of the fasteners 12 serves to yieldably retain the wrenches in the normal spaced relation to each other and not only serves to prevent them from having excessive swinging movement when the wrench is not in use but also serves to prevent the wrench 1 from having rotary movement which might accidentally disconnect the socket 25 from the threaded end of the link 20.

When it is desired to uncouple a pipe section from another pipe section or coupling connecting it with the second pipe section, the handle 12 is withdrawn from the socket 13 after moving the latch 14 outwardly a sufficient distance to release it and the handle rotated a one-half turn and replaced in the socket. The wrench 1 will now be disposed at the opposite side of the wrench 2 and when the two pipe sections or pipe section and coupling are gripped by the wrenches and pressure applied to the handle the pipe section 28 will be rotated to unscrew it from the coupling 29.

Having thus described the invention, I claim:

1. A tool of the character described comprising companion wrenches disposed in transverse spaced relation to each other and each including a jaw pivotally mounted for movement into and out of a gripping position, a handle pivotally connected with the pivoted jaw of one wrench, and a link extending diagonally of the handle and having one end directly pivoted to said handle and its other end pivotally connected with the pivoted jaw of the other wrench.

2. A tool of the character described comprising companion wrenches disposed in transverse spaced relation to each other, a handle pivotally connected with one wrench, for extending longitudinally therefrom, and a link extending diagonally of said wrenches with its forward and rear end portions offset with respect to its intermediate portion and substantially parallel to each other, the rear end portion of said link being pivotally connected with said handle and the forward end portion of the link being pivotally connected with the other wrench.

3. A tool of the character described comprising companion wrenches each including a pivoted jaw, sockets pivotally connected with the pivoted jaws of said wrenches and extending longitudinally therefrom, a handle secured at one end in the socket of one wrench, and a link pivoted at one end to said handle and having its other end secured in the socket of the other wrench.

4. A tool of the character described comprising companion wrenches each including a pivoted jaw having a gripping head and an elongated shank, a socket pivotally connected with the free end of the shank of the pivoted jaw of each wrench and extending longitudinally therefrom, the sockets of said wrenches having swinging movement towards and away from each other, a handle having one end fitted into the socket of one wrench and extending longitudinally therefrom, and a link pivoted at one end to said handle and having its other end secured in the socket of the other wrench.

5. A tool of the character described comprising companion wrenches each including a pivoted jaw having a gripping head and an elongated shank, a socket pivotally connected with the free end of the shank of the pivoted jaw of each wrench and extending longitudinally therefrom, the sockets of said wrenches having swinging movement towards and away from each other, a handle having one end fitted into the socket of one wrench and extending longitudinally therefrom, a link pivoted at one end to said handle and having its other end secured in the socket of the other wrench, and a spring extending between and secured to the wrenches to yieldably resist movement of the wrenches away from each other.

6. A tool of the character described comprising companion wrenches each including a pivoted jaw having a gripping head and an elongated shank, a socket pivotally con-

nected with the free end of the shank of the pivoted jaw of each wrench and extending longitudinally therefrom, the sockets of said wrenches having swinging movement towards and away from each other, a handle having one end fitted into the socket of one wrench and extending longitudinally therefrom, and a link pivoted at one end to said handle and having its other end screwed into the socket of the other wrench.

7. A tool of the character described comprising companion wrenches each including a pivoted jaw having a gripping head and an elongated shank, a socket pivotally connected with the free end of the shank of the pivoted jaw of each wrench and extending longitudinally therefrom, the sockets of said wrenches having swinging movement towards and away from each other, a handle having one end fitted into the socket of one wrench and extending longitudinally therefrom, and a link pivoted at one end to said handle and having its other end screwed into the socket of the other wrench, said handle being adapted to be turned in the socket of the first-mentioned wrench and releasably secured with the link and second-mentioned wrench disposed at a selected side of the first-mentioned wrench.

8. A tool of the character described comprising companion wrenches, a handle, a link pivotally connected with said handle and one of said wrenches, and a socket pivotally connected with the other wrench and adapted to removably receive said handle with the first wrench disposed at a selected side of the second wrench.

In testimony whereof I affix my signature.

MARKS J. TULLY. [L. S.]