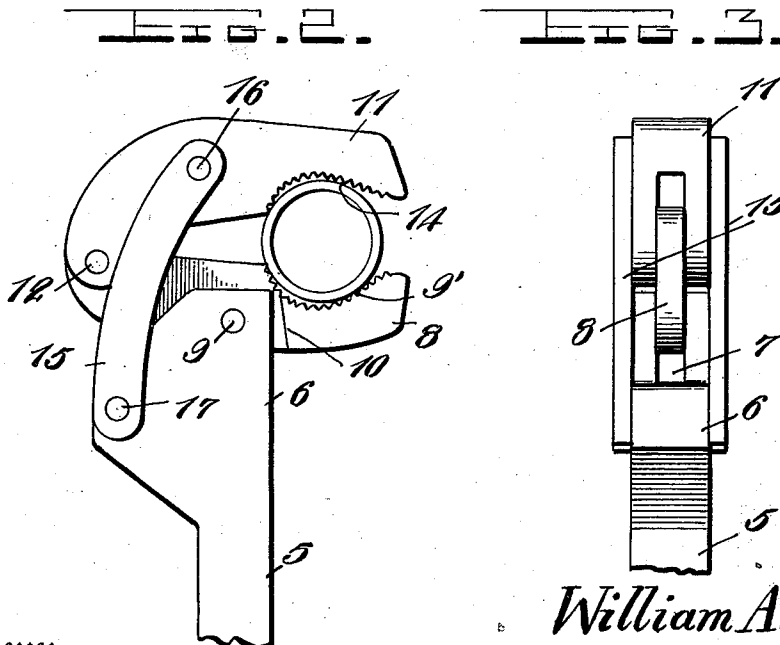
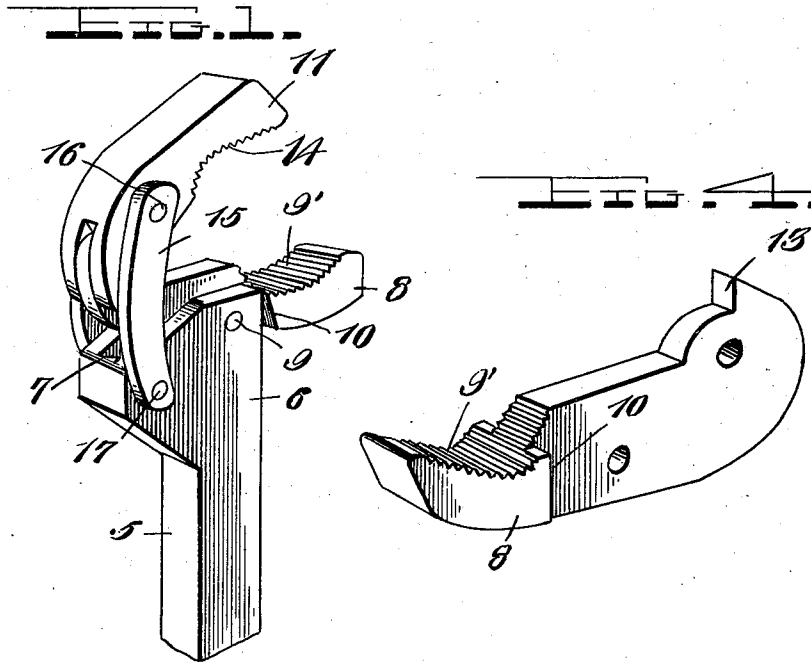


W. A. LITTLE.
WRENCH.
APPLICATION FILED MAY 24, 1911.

1,029,074.

Patented June 11, 1912.



Witnesses

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WRENCH.

1,029,074.

Specification of Letters Patent. Patented June 11, 1912.

Application filed May 24, 1911. Serial No. 629,103.

To all whom it may concern:

Be it known that I, WILLIAM A. LITTLE, a citizen of the United States, residing at Cresson, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to wrenches and more particularly to an improved pipe or rod wrench, the invention having for its primary object to provide a simple and novel device of this character whereby a secure gripping of the wrench jaws upon the pipe may be quickly obtained without the necessity of making any adjustments.

A further object of the invention is to provide co-acting wrench jaws, one of which is pivotally mounted in a suitable handle, and means for connecting the other of said jaws to the first named jaw and to the handle whereby a maximum leverage is obtained in the use of the wrench.

Still another object of the invention is to provide improved means for mounting the wrench jaws upon the operating handle whereby the pressure of the jaws is equally distributed upon the periphery of the pipe or rod, such mounting also enabling the device to be manipulated in a very restricted space.

A further object of the invention is to provide a pipe wrench consisting of very few simply constructed parts which may be manufactured at a small cost and provide a wrench of great durability.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a pipe or rod wrench embodying my improvements, showing the wrench jaws opened to their greatest extent; Fig. 2 is a side elevation showing the wrench jaws engaged upon a pipe; Fig. 3 is an edge view; and Fig. 4 is a detail perspective view of one of the jaws.

Referring specifically to the drawings 5 designates the operating handle which is enlarged or provided with a head 6 at one end. This head is bifurcated as indicated at

7 to receive one of the wrench jaws 8 which is pivotally mounted upon the transverse pin 9 extending through the head 6 and the intermediate portion of the jaw. One end of the jaw 8 is enlarged and is adapted to engage the periphery of the pipe, the pipe engaging surface thereof being provided with teeth or serrations 9' for gripping engagement upon the pipe. This serrated surface of the jaw is curved as clearly shown in Fig. 2 and has two separate points of contact upon the periphery of the pipe or rod. By enlarging the pipe engaging end of the jaw 8, the shoulders 10 are provided which are adapted to engage the side of the head 6 and limit the closing movement of the jaws.

The complementary wrench jaw 11 is bifurcated at one of its ends to receive the end of the jaw 8, said jaws being pivotally connected by means of the transverse pin 12. The end of the jaw 8 is provided with a shoulder 13 which is adapted to abut against the base of the bifurcation in the end of the jaw 11 and limit the opening movement of said jaws. The other end of the jaw 11 is provided with the serrations or teeth 14 upon its face which is opposed to the face of the jaw 8, said serrated surface being also concave or curved oppositely to the serrated surface of the first mentioned jaw so that it also has separate points of contact upon the periphery of the pipe and upon the opposite side thereof to the engaging points of the wrench jaw 8.

The jaw 11 is connected to the head 6 of the shank or handle 5 by means of a pair of link bars 15 which are pivoted at one of their ends to the intermediate portion of said wrench jaw by means of the pin 16, said links being disposed upon opposite faces of the jaws. A pivot pin 17 connects the other ends of said link bars to the head 6, said pivot pin being disposed through the head and adjacent to one edge thereof out of alinement with the pivot 9 of the jaw 8. It will thus be seen that when the jaws are opened to their fullest extent as shown in Fig. 1, the pivots 16 and 17 of the link bars 14 are disposed substantially in the same vertical plane and also in alinement with the pivot 12 connecting the wrench jaws.

In engaging the wrench upon a pipe or rod, the jaws are opened as shown in Fig. 1.

The operator firmly grasps the handle 5 and disposes the jaws at opposite sides of the pipe or rod, engaging the jaw 8 therewith and forcing the wrench forwardly. The pressure exerted by the jaw 8 upon the pipe or rod causes said jaw to move upon its pivot and force the other jaw 11 which is connected thereto into engagement with the opposite side of the pipe. The serrated faces of the jaws are thus engaged upon the pipe or rod, the contacting points thereof being so disposed upon the surface of the rod as to exert the pressure at substantially opposite points, thus equalizing the strain and preventing distortion or fracture of the pipe. The operator now moves the handle 5 in a circular line, and owing to the link connections of the jaw 11 with the head 6 and the relative disposition of the pivotal points of the links and the jaw 8 in said head, a very great leverage of the jaws is obtained upon a comparatively slight movement of the handle. The exertion required in the operation of the device is therefore minimized. As no adjustments are required in positioning the wrench jaws upon the pipe, it will be readily seen that the wrench may be easily and quickly applied, and as the gripping points of the jaws are disposed upon opposite sides of the center of the pipe, all liability of said jaws slipping in the turning movement of the wrench is eliminated.

From the foregoing it will be seen that I have devised a very simple and novel construction of wrench which is adapted for use upon pipes, rods, nuts and other elements which it is desired to loosen or remove. By mounting the jaws in the peculiar manner above described, the strain upon the same is equally distributed which acts to prevent the pivot pins from breaking. Should, however, any one of the pins be broken in the

use of the device, it may be readily replaced at a minimum expense. As my improved wrench is of very substantial construction, it will be obvious that the same is extremely strong and durable in practical use. It is also extremely efficient for the purposes in view and may be manufactured at a small cost.

While I have shown and described the preferred embodiment of the various elements, it will be obvious that the device is susceptible of a great many minor modifications without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

A wrench of the character described comprising a handle, a jaw pivotally mounted intermediate of its ends in one end of said handle, a second jaw pivotally connected to one end of the first named jaw and co-acting therewith, a pair of links pivotally connected to said second named jaw intermediate of its ends, the inner ends of said links being pivoted to the handle inwardly of the pivot of said first named jaw and out of alinement therewith longitudinally of the handle, the pivot connecting said links to the second named jaw being disposed in a plane which is intermediate of the plane of the pivot of said first named jaw and the plane of the pivot connecting the links to the handle when considered with respect to the longitudinal axis of said handle and when the jaws are closed upon an object.

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

WILLIAM A. LITTLE.

Witnesses:

M. C. LYDDANE,
E. L. WHITE.