(No Model.)

C. C. WALWORTH.

PIPE WRENCH.

No. 262,263. Patented Aug. 8, 1882.

Fig. 1.

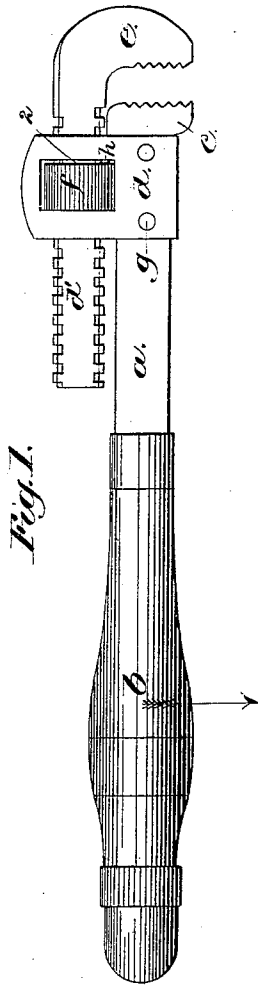
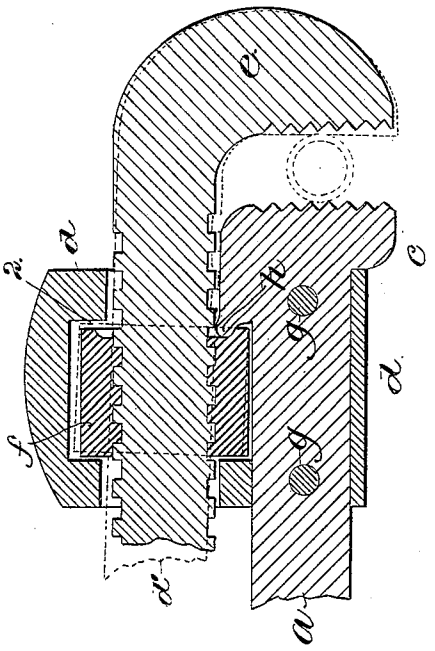


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

CALEB C. WALWORTH, OF BOSTON, MASSACHUSETTS.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 262,263, dated August 8, 1882.

Application filed March 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, CALEB C. WALWORTH, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Pipe-Wrenches, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to a pipe-wrench, and is shown embodied in a wrench of that class in which one of the jaws is loosely connected with the other or made movable for a slight distance when force is applied to the arm of the wrench to turn the pipe or other article in such manner that the jaws are drawn more tightly together upon the said pipe and take a firmer hold the greater the power applied to turn the pipe.

The invention has for its object to produce a wrench simpler in construction, stronger, and more durable than those of this class heretofore in use.

One of the jaws is made at the end of the main body or handled portion of the wrench, and the said body portion of the wrench is provided with a guide for the other jaw, the shank of which is made movable longitudinally in the said guide by means of a nut to adjust the distance between the said jaws for the purpose of acting on pipes of different diameters.

As heretofore constructed this guide for the movable jaw has served to transmit the pressure from the main body of the wrench to the nut and movable jaw, the said nut bearing upon the said guide, which is consequently subjected to great strain in using the wrench, the strain upon the said guide being proportional to the power applied to the shank of the wrench for turning the article, and the said guide is liable to be broken or torn from the body of the wrench.

In my present invention the guide for the movable jaw merely serves to hold the said jaw and its adjusting-nut in proper position on the body of the wrench, and the said body of the wrench is provided with a bearing-point for the adjusting-nut of the movable jaw, engaging one side thereof between the shanks of the fixed and movable jaws and receiving the entire strain transmitted between the jaws, the guide being never subjected to any strain in using the wrench. The movable jaw is made to fit loosely in the said guiding portion, so that when pressure is brought to bear upon the handle of the wrench the said movable jaw and nut turn on the said bearing-point for the nut in such a manner as to bring the faces of the jaws more closely together, and consequently grip the article being turned more tightly. By thus relieving the guide-piece of strain, by transmitting the force directly from the body of the wrench instead of transmitting it through the guide-piece for the movable jaw, as heretofore done, the wrench is much stronger and more durable, it being also simpler and cheaper in construction.

Figure 1 shows in side elevation a wrench constructed in accordance with this invention, and Fig. 2 a longitudinal section of the jaws thereof on a larger scale.

The shank portion or main body *a* of the wrench, provided with a handle, *b*, and having made at the end thereof a jaw, *c*, in the usual manner, is provided with a guide-piece, *d*, for the shank *d'* of the movable jaw *e* and its adjusting-nut *f*, the said guide-piece either being made in the same piece with the said body *a* and fixed jaw *c* or being rigidly fastened thereto, as by rivets *g*.

The shank *d'* of the movable jaw *e* and its adjusting-nut *f* are fitted loosely, the former in a longitudinal and the latter in a transverse slot or passage in the guide-piece *d*, as shown in Fig. 2, so as to have a slight rocking motion, as shown by the full and dotted lines in the said figure.

The main body *a* of the wrench is provided with a pivotal bearing-point, *h*, for the said adjusting-nut, at one side thereof, it acting upon the portion of the nut that lies between the main shank *a* of the wrench and the threaded shank *d'* of the movable jaw, which the said nut surrounds, in order to adjust the said jaw by rotating the nut in the usual manner.

When pressure is applied to the handle *b* in the direction of the arrow, Fig. 1, to turn a pipe or cylindrical article inserted between the jaws, as shown in Fig. 2, the movable jaw being properly adjusted by the nut *f*, the force transmitted from the jaw *c* to the side of the pipe and from the point *h* to the nut *f* and movable jaw *e* and the other side of the pipe will tend to rock the movable jaw and nut

upon the point *h* as a pivot from the full-line toward the dotted-line position, Fig. 2, thus gripping the pipe the more tightly the greater the pressure applied to the handle *b*.

By turning the handle *b* in the opposite direction to the arrow, Fig. 1, the jaws will open out from the dotted-line toward the full-line position, Fig. 2, so that the wrench may be readily disengaged from the article in the usual manner.

The space 2 between the front or bearing face of the nut and the adjacent portion of its guiding-frame *d* is so great that the nut in its rocking movement never touches nor bears upon the said frame, which is thus relieved from all strain, and as the said frame has usually been the weakest part of the wrench, or portion that is most liable to break, it will be seen that the wrench is much more durable by this construction.

The function of the frame *d* is merely to keep the parts of the wrench together when not in use, and also to assist in the longitudinal adjustment of the movable jaw, and while the wrench is actually in operation turning an article in the direction of the arrow, Fig. 1, the guide *d* might actually be removed from the wrench without changing its operation.

I am aware that wrenches have previously been made in which the pivoted point for the movable jaw is on the rear side of the fixed jaw; but such construction necessitates the said fixed jaw having an opening through which the shank of the movable jaw passes, thus greatly weakening the wrench at the very point where the breaking strain is greatest. In such construction the fixed jaw also performs the function of guide for the movable jaw; but by making the said guide independent and mounting it on the opposite side of the main body of the wrench to the fixed jaw such weakening of the wrench is wholly obviated.

I claim—

1. The main body of the wrench and its fixed jaw and the independent guide for the movable jaw fixed on the said body of the wrench at the opposite side to the fixed jaw, combined with the movable jaw and its adjusting-nut surrounding the shank thereof, the said jaw and nut being fitted loosely in the said guide and the said nut bearing directly upon the said main body of the wrench, substantially as described.

2. The main body or shank *a* of the wrench, provided with a jaw at the end thereof, and a guide, the said guide and jaw being fixed relative to one another at opposite sides of the said shank *a*, combined with a movable jaw and adjusting-nut therefor mounted loosely in the said guide, the said main body of the wrench being provided with a pivotal bearing-point for the portion of the said adjusting-nut that lies between the shanks of the said fixed and movable jaws, whereby the said guide is relieved of all strain, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CALEB C. WALWORTH.

Witnesses:

JOS. P. LIVERMORE,

B. J. NOYES.