(No Model.)

G. H. MILLER.

PIPE WRENCH.

No. 548,571. Patented Oct. 22, 1895.

Fig. 1.

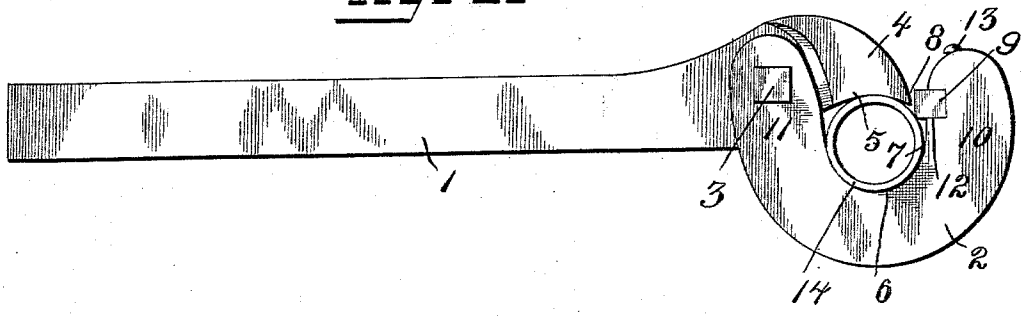


Fig. 2.

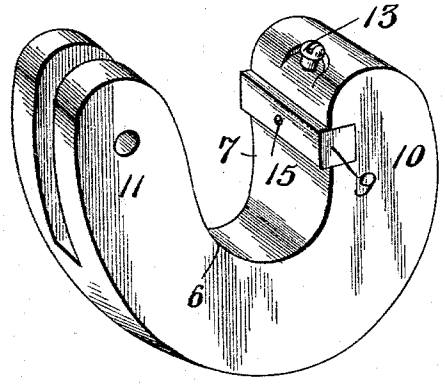


Fig. 4.

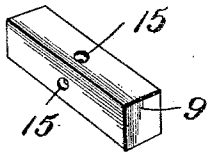
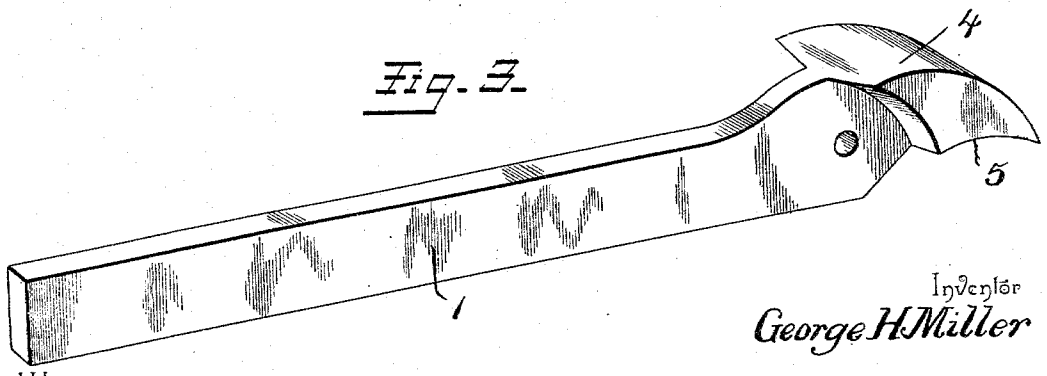


Fig. 3.



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UNITED STATES PATENT OFFICE.

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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 548,571, dated October 22, 1895.

Application filed May 25, 1895. Serial No. 550,696. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HARRISON MILLER, a citizen of the United States, residing at North Hope, in the county of Butler and State of Pennsylvania, have invented a new and useful Pipe-Wrench, of which the following is a specification.

The purpose of the present invention is the provision of an automatic wrench designed for use on oil or Artesian well-tubing or piping of any character, which can be successfully operated by one hand, and which after being properly positioned upon a vertically-disposed tube or pipe will remain in place against accidental displacement either by vibrations of the said pipe or tubing or by blows received thereon.

A further purpose of the invention is to devise a wrench of the character and for the purpose set forth that will be strong and durable, which at the same time will be light and comprise the fewest number of parts possible, and which can be easily manipulated by one hand and will firmly and securely grip the pipe or tubing when it is required to turn the latter in the required direction.

In boring Artesian and oil wells it is desirable to turn the tubing at stated periods, and the operation is greatly facilitated by the provision of a wrench that can be operated by one hand and which will be self-supporting and maintain itself upon the well-tubing under all conditions. The present invention fills these requirements; and it consists of the novel formation of wrench hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a pipe-wrench constructed in accordance with the principles of the present invention. Fig. 2 is a detail view of the curved and movable jaw. Fig. 3 is a detail view of the lever or handle. Fig. 4 is a detail view of the reversible dog or bit.

The handle or lever 1 has the movable jaw 2 pivoted thereto in proximate relation to its operating end and is extended beyond the pivot 3 to provide a jaw 4, which is expanded laterally, so that the sides of the jaw 4 will come about flush with the sides of the movable jaw 2. The clamping-face 5 of the jaw 4 is curved in an opposite direction to and away from the inner curved end 6 of the movable jaw 2, and its outer face 7 is similarly curved and intersects with the clamping-face 5, so as to form an edge 8, which operates in proximate relation to the dog or bit 9.

The movable jaw 2 is semielliptical and has the opposing members 10 and 11 of different lengths, the member 11 being the longer and cleft so as to embrace the sides of the lever 1, to which it has pivotal connection by means of the pivot 3 in the usual manner. A transverse seat 12 is formed in the inner side of the nose of the member 10, and is adapted to receive the dog or bit 9, which is snugly fitted therein, and a binding-screw 13, passing through the nose of the member 10, is adapted to engage at its inner end with the dog or bit 9 and retain the latter within the said seat 12. The inner curve 6, between the members 10 and 11, corresponds exactly to one-half of the pipe or tubing 14, for which the wrench is especially constructed, and the biting edge or corner of the dog or bit 9 comes a little to one side of the longitudinal center of the tubing or pipe 14, so as to bite into the latter and grip the same tangentially in the successful operation of the tool. The members 10 and 11 extend along diametrically-opposite sides of the pipe or tubing 14, so as to retain the wrench in position thereon after being placed thereupon.

The dog or bit 9 is of highly-tempered steel and is square in cross-section, and its corners form the biting-edges, by means of which the wrench takes hold of the pipe or tubing when it is required to turn the latter. This dog or bit is of a length corresponding to the distance between the sides of the jaw 2, so that the ends of the dog or bit will come flush with the sides of the jaw, and the said dog or bit is of greater breadth than the depth of the seat 12, so that a portion will extend beyond the inner wall of the member 10 to admit of the corner or biting-edge gripping the pipe or tubing 14 when operating the lever or handle 1 in the proper direction. Depressions 15 are formed in the sides of the dog or bit 9 for the reception of the inner end of the binding-screws 13, whereby the said dog or bit is firmly held in place in the seat 12.

The component parts of the wrench being assembled, as shown most clearly in Fig. 1, the operation of the tool is as follows: The

movable jaw 2 is fitted upon the vertically-disposed pipe or tubing 14, and by reason of the semielliptical shape of the jaw the opposing sides of the members 10 and 11 will hug closely the opposite sides of the pipe or tubing 14 and retain the wrench in proper position upon the said pipe or tubing against accidental displacement. On operating the lever 1, so as to move the jaw 4 toward the inner-curved end of the jaw 2, the gripping edge or corner of the dog or bit 9 will be caused to take hold of the pipe or tubing, and the latter will be turned on a continued application of sufficient force upon the lever 1, so as to attain the desired result. After one corner or edge of the dog or bit has become dulled the said dog or bit can be removed from its seat 12 and changed so as to present a new biting-edge, as will be readily understood. It will be understood that the wrench or tool is especially constructed to be used in connection with a given size of pipe or tubing, and that a wrench will be provided for each size of the pipe or tubing to be operated upon.

The precise form of the curvature 6 is immaterial to the successful operation of the invention so long as the jaw 2 is semielliptical in shape and its members 10 and 11 are constructed to embrace the opposite sides of the pipe or tubing and retain the wrench in working position upon the pipe or tubing with which it is designed to employ the tool. Hence in the embodiment of the invention various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

A pipe wrench constructed substantially as herein shown and described, consisting of a handle and a pivoted jaw, the latter being semi-elliptical and constructed to snugly embrace the sides of the pipe for which the tool is designed and automatically be retained thereon, and having its end portions extending beyond the sides of the said pipe to unequal distances, the longer end being cleft, and the shorter end having a transverse seat in its inner face, a bit reversibly fitted in the said seat and having its inner corner arranged to bite into the pipe to that side of the longitudinal center remote from the inner closed end of the jaw, and the handle having pivotal connection with the cleft end of the pivoted jaw and having its end projected beyond the pivot to form a jaw which extends across and normally closes the space formed between the ends of the pivoted jaw and which is curved on its inner face in an opposite direction to the inner closed end of the pivoted jaw and expanded laterally, substantially as shown for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE HARRISON MILLER.

Witnesses:

BLAIR HOOKS,

HENRY KARN.