(No Model.)

D. J. THAYER.

WRENCH FOR OIL WELL TOOLS.

No. 421,020. Patented Feb. 11, 1890.

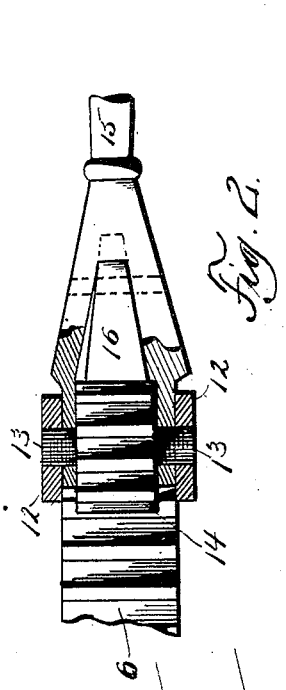

Fig. 2.

Fig. 1.

WITNESSES
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WRENCH FOR OIL-WELL TOOLS.

SPECIFICATION forming part of Letters Patent No. 421,020, dated February 11, 1890.

Application filed February 28, 1889. Serial No. 301,432. (No model.)

To all whom it may concern:

Be it known that I, DEXTER J. THAYER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Tightening and Loosening Oil and Gas Well Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in devices for tightening and loosening oil and gas well tools.

It is essential in putting on the sections of oil and gas well tools that they should be screwed together very tightly, in order that they may not come apart in the well and thus cause trouble and delay. As these sections also have to be taken apart, as much power is required to separate them.

It is the object of my present invention to provide means for applying power whereby the tools are easily put together or taken apart without liability of accidental separation; and with this end in view my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a derrick-floor, showing my improved loosening and tightening device in position thereon; and Fig. 2 is a view in section on the line *x x* of Fig. 1.

A represents a derrick-floor.

C C′ are sections of the drilling-tools used. As shown, one end of the section C′ just projects above the floor of the derrick, and to this the section C is secured in the usual manner of coupling these sections. This joint 1 is made by turning the wrenches 2 until the sections are comparatively tight together, or as tight as the joint can be easily made by manipulating the wrenches by hand. It is now that my invention comes into use. This device consists of a bar of metal, preferably in the general shape of an ordinary railway-rail, with an enlarged or flanged base 3, a web 4, and an enlarged crown 5. There is this important difference, however, that the crown is provided with rack-teeth 6, and that the recesses 7, formed in the sides of the bar, are by preference of angular or square formation to form guides, to be referred to hereinafter. On one end of the bar a rigid jaw 8 is located. This jaw is formed with a thick neck, so that it furnishes a solid and unyielding abutment, and in its inner face it is furnished with a recess 9, adapted to receive one of the wrenches 2. A jaw 10, of similar character, but adapted to slide on the bar, straddles the latter. This sliding or adjustable jaw is provided on its inner face with a recess 11, similar to recess 9 and for the same purpose. The sides 12 of this jaw extend over the sides of the rack, and at their lower ends project into the guide-recesses 7 in the sides of the bar, which constitute guides or tracks for the jaw. The sides 12 of this jaw extend backward a short distance to receive the axle 13 of the pinion 14, the teeth of which are meshed with the rack-teeth. Hand-lever 15 is loosely mounted on the axle 13, straddling the pinion 14, and pivoted in the crotch of this lever is the gravity-pawl 16, which normally engages teeth of the pinion, locking the lever thereto when it is raised, and releasing its engagement by sliding over the teeth when the lever is lowered again to take a new hold.

The operation of the device is quite simple, as the drawings will illustrate. The wrenches are placed on the drill-sections, as indicated in Fig. 1, and the end of one is placed in recess 9 and the end of the other in recess 11. The hand-lever is then raised, forcing the sliding jaw forward and depressed to take a new hold. By this method the sections of the drill may also be loosened as well as tightened, this of course only necessitating the placing of the upper wrench in the movable jaw and the lower wrench in the rigid jaw. To move the sliding jaw back, the pivoted pawl 16 may be raised out of engagement with the teeth of the pinion and the jaw may be readily pushed back.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the particular construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a bar having teeth thereon and a rigid jaw at one end thereof, of a movable jaw mounted on said bar, a pinion and lever for moving said movable jaw, a wrench bearing against the rigid jaw, and a wrench carried by the movable jaw, substantially as set forth.

2. The combination, with a bar having a toothed upper surface, a rigid jaw at one end thereof, a movable jaw mounted thereon, a pinion loosely mounted on the movable jaw, and a lever and gravity-pawl for actuating the pinion, of a wrench bearing against the rigid jaw, and a wrench carried by the movable jaw, substantially as set forth.

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

DEXTER J. THAYER.

Witnesses:
P. B. CROSBY,
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