No. 775,733. PATENTED NOV. 22, 1904.

W. E. A. PIPHER.

WELL JACK.

APPLICATION FILED MAY 24, 1904.

NO MODEL.

Fig. 1.

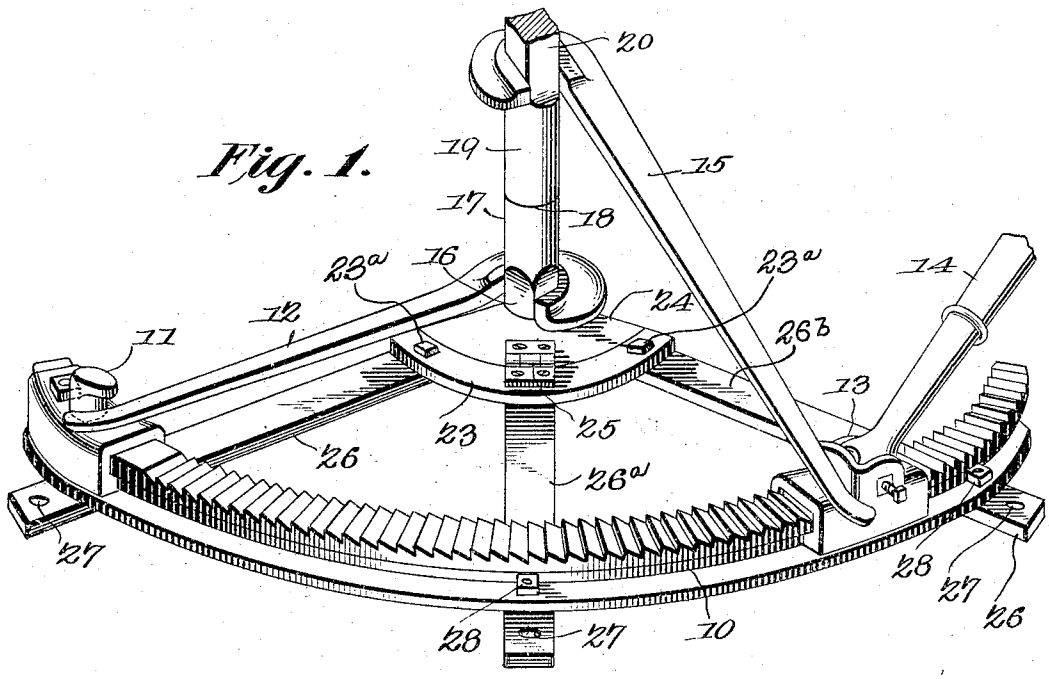
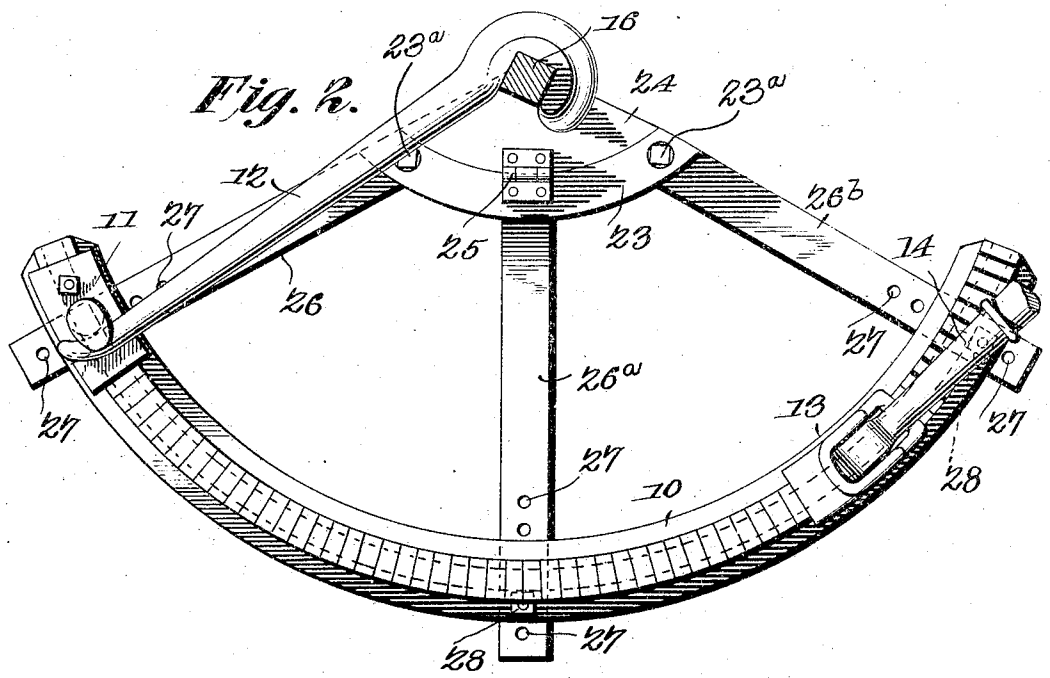


Fig. 2.



Witnesses

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No. 775,733. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM E. A. PIPHER, OF PARKERS LANDING, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO WILLIAM G. McGLAUGHLIN AND JOHN H. PIPHER, OF PARKERS LANDING, PENNSYLVANIA.

WELL-JACK.

SPECIFICATION forming part of Letters Patent No. 775,733, dated November 22, 1904.

Application filed May 24, 1904. Serial No. 209,529. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. A. PIPHER, a citizen of the United States, residing at Parkers Landing, in the county of Armstrong and State of Pennsylvania, have invented a new and useful Well-Jack, of which the following is a specification.

This invention relates to apparatus for coupling and uncoupling the sections of drill-rods and other parts of oil and Artesian wells or for similar purposes, and has for its object to improve the construction and provide a simply-constructed and conveniently-operated apparatus of increased efficiency and durability and which in use will not injure the well-casing or other parts of the well-drilling apparatus.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a well-jack, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective, exhibiting the apparatus in operative position. Fig. 2 is a view in plan with a part of the apparatus removed.

In operating an ordinary oil-well jack the lateral strain or pressure is frequently so great that damage results to the piping, casing, plates, and other parts of the well-drilling apparatus unless lateral strain is prevented by employing temporary stays or braces, generally of wood, which is troublesome, laborious, and results in delay, increasing thereby the operating expense of the well-drilling apparatus. Furthermore, the ordinary well-jack has to be secured to a platform or other stationary structure every time it is employed or left permanently in position thereon, and the result it that damage or breakage frequently occurs by parts of machinery falling upon it.

With the apparatus of the present invention the above-noted objects are in a ready and positive manner obviated and a well-jack is presented which will effectually prevent any injury to the casing or other parts of the well-drilling apparatus no matter how great the strain or power employed for effecting coupling or uncoupling of the drill-rods may be.

The present apparatus comprises a toothed bar 10, preferably segmental in form and having at one end a stop 11 for engaging the free end of one of the operating-wrenches, 12, and provided, further, with step-by-step lever mechanism (indicated generally by 13 and 14) to engage with the free end of the other operating-wrench, 15. As this step-by-step mechanism is of the usual form and as the details of construction form no part of the present invention, detailed illustration thereof is omitted.

As is well known, apparatus of this character are operated by applying one of the wrenches, 12, of the squared or oblong portion 16 of the bit-stock 17 adjacent to the joint 18, by which it is united to the drill-stem 19, and engaging the free end of the wrench-handle with the stop 11 and then applying the other wrench, 15, to the squared portion of the drill-stem, with the free end of this handle bearing against the step-by-step mechanism, and as the lever of the latter is operated the wrenches are moved toward each other, and the complete joining of the parts 17 and 19 is effected. The members 16 and 19 are disconnected by reversing the disposition of the wrenches—that is to say, the wrench 12 will have its handle in engagement with the step-by-step mechanism and the wrench 15 will have its handle in engagement with the stop 11, and upon operating the lever 14 the parts will be uncoupled, as will be readily apparent.

Under the operation of the lever mechan-

ism there will be caused a heavy lateral strain between the members 17 and 19 and the rack-bar 10, which frequently results in damage to the well-casing and other parts of the well-drilling machinery. To overcome or counteract this strain, a thrust-bearing is employed comprising two segmental members 23 and 24, connected by a hinge 25. The outer side of the member 24 has a recess, preferably semicircular in form, to engage the drill-rod below the squared portion 16, and connected with the member 23 are three radially-disposed braces 26, 26^a, and 26^b, the braces 26 and 26^b being pivotally connected with the member 23 through the medium of bolts 23^a, thus to permit these braces to be moved to and from the center brace 26^a in effecting adjustments of the apparatus. Each brace is provided with a plurality of spaced apertures 27, which are engaged by bolts 28 to hold the braces adjustably connected with the bar 10 relative to the member 23.

As will be seen from the construction of the apparatus, the employment of the ordinary platform for holding it properly positioned with relation to the drill-rod or well-casing is rendered unnecessary, as it will be seen that all lateral strain is absorbed by the braces 26, 26^a, and 26^b and the thrust-bearing. In other words, the strains are centered. By dispensing with the employment of a platform not only is considerable expense saved in the operation of the apparatus, but its movement from point to point is facilitated and the time required to set it up for operation measurably decreased.

While the apparatus of this invention is exceedingly simple of construction, it will be found thoroughly efficient and durable in use for the purpose designed and will in a positive manner secure the objects sought.

Having thus described the invention, what is claimed is—

1. An apparatus of the class described comprising a thrust-bearing, a toothed segmental bar and step-by-step mechanism combined therewith, and braces connecting the thrust-bearing and the said bar.

2. An apparatus of the class described comprising a thrust-bearing, a toothed segmental bar and step-by-step mechanism combined therewith, and adjustable braces connecting the thrust-bearing and the said bar.

3. An apparatus of the class described comprising a toothed segmental bar and step-by-step mechanism combined therewith, and radial braces connecting the bearing and the bar, the outer braces being mounted for pivotal movement with relation to the bar.

4. An apparatus of the class described comprising a toothed segmental bar and step-by-step mechanism combined therewith, a thrust-bearing including a fixed and movable member, and a plurality of braces connecting the fixed member and the bar, the outer braces being pivotally connected with the fixed member.

5. An apparatus of the class described comprising a rack-bar, a thrust-bearing including a fixed and a movable member, and a plurality of braces connecting the fixed member and the bar.

6. An apparatus of the class described comprising a rack-bar having a step-by-step mechanism combined therewith, a thrust-bearing, and braces connecting the thrust-bearing and the bar.

7. In an apparatus of the class described, a rack-bar having a step-by-step mechanism combined therewith, a thrust-bearing, and brace members connected at one end to the thrust-bearing and having their other ends adjustably connected with the bar.

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

WILLIAM E. A. PIPHER.

Witnesses:
G. A. NEEDLE, Jr.,
WILLIAM H. BLYMELLER.