

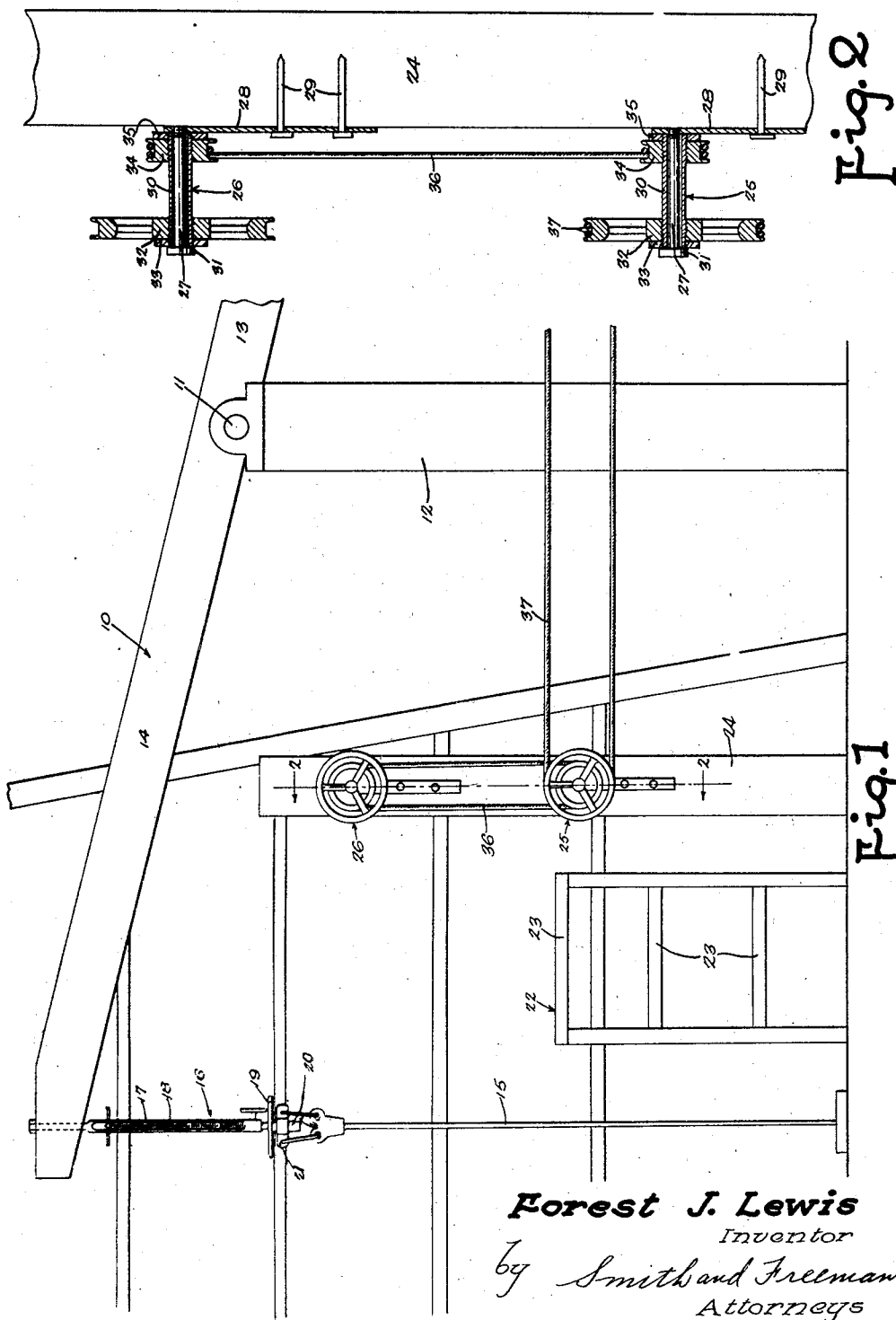
Sept. 6, 1927.

F. J. LEWIS

1,641,176

APPARATUS FOR DRILLING WELLS

Filed Sept. 7, 1926



Forest J. Lewis
Inventor

by *Smith and Freeman*
Attorneys

UNITED STATES PATENT OFFICE.

FOREST J. LEWIS, OF CLEVELAND, OHIO.

APPARATUS FOR DRILLING WELLS.

Application filed September 7, 1926. Serial No. 133,896.

My invention relates to drilling rigs for oil wells, and particularly to means for controlling the power plant during adjustment of the mechanism connecting the drill to the power plant, and the principal object of my invention is to provide new and improved means of this type. In the drawings accompanying this specification and forming a part of this application I have shown, for purposes of illustration, one form which my invention may assume. In these drawings:

Figure 1 is an elevation showing this embodiment of my invention as applied to a drilling rig for oil wells, while

Figure 2 is a fragmentary section on the line 2—2 of Figure 1.

The embodiment of my invention herein shown comprises a walking beam 10 pivotally mounted at 11 upon a post 12, driven in any suitable manner by any suitable source of motive power, as by a crank mounted on the shaft of a steam engine and engaging the outer end (not shown) of the arm 13 of the walking beam 10, and having its other arm 14 connected to a suitable drill means 15 through a suitable connecting means 16 comprising a sleeve 17 unitary with the arm 14 of the walking beam 10, and a screw 18 unitary with the drill means 15, rotatable by means of a hand wheel 19, and rotatable relative to the drill means 15 by means of a rotatable connection comprising a shaft 20 unitary with the screw 18 and a collar 21 unitary with the drill means 15, the connecting means 16 thus providing, by rotation of the screw 18 in the sleeve 17, for longitudinal adjustment of the drill means 15 relative to the arm 14 of the walking beam 10 as the drill means 15 penetrates.

As is well known to those skilled in the art, the adjustment of the connecting means 16 may best be made when the drill means 15 and arm 14 of the walking beam 10 are in their upper position; as will be obvious from the foregoing description, the elevation of the hand wheel 19 at this point in the stroke will vary according to the adjusted position of the connecting means 16; and in order to provide access to the hand wheel 19 in all its various elevations the drilling rig comprises a stool 22 provided with a plurality of steps 23 serving to support the operator in various elevations corresponding roughly to the various elevations of the hand wheel 19.

In order to permit the operator to control the operation of the walking beam 10 and

connecting means 16 and drill means 15 while he is adjusting the connecting means 16 it is customary to extend the control of the walking beam operating motor to a point adjacent the stool 22, and when the mechanism is operated by means of a steam engine, as heretofore set forth, it is customary to provide this control by means of a cable extending between a pulley disposed on the throttle shaft of the steam engine and a pulley mounted on a post disposed adjacent the stool 22, the connection being such that rotation of the pulley mounted on the post adjacent the stool 22 will act through the cable connecting the pulleys, and through the pulley on the engine throttle shaft, to rotate the engine throttle shaft to vary the operation of the engine, and to thus vary the operation of the walking beam 10 and drill means 15.

The engine control means herein shown comprises a post 24 mounted adjacent the stool 22 and provided with a pair of pulley units 25 and 26 spaced from each other vertically along the post, the lower pulley unit 25 disposed in position to be readily accessible by the operator when he is in the lower positions on the stool 22, and the upper pulley unit 26 disposed in position to be readily accessible by the operator when he is in the upper positions on the stool 22, and each of the pulley units 25 and 26 comprising a stud 27 screw-threaded into a plate 28 secured to the post 24 by means of spikes 29, a sleeve 30 rotatably mounted upon the stud 27 and held against movement longitudinally of the stud 27 by engagement at one end with the plate 28 and at the other end with the head 31 of the stud 27, a hand wheel pulley 32 screw-threaded on the outer end of the sleeve 30 and held in position by means of a lock nut 33, and a small pulley 34 screw-threaded upon the opposite end of the sleeve 30 and held in position by a lock nut 35, and the two units 25 and 26 being connected to operate in unison, and to operate the pulley on the engine throttle shaft, by means of a first cable 36 connecting the two small pulleys 34 of the units 25 and 26, and a second cable 37 connecting the hand wheel pulley 32 of the lower unit 25 with the pulley mounted on the engine throttle shaft.

From the above description it will be obvious to those skilled in the art that I have provided a control means readily ac-

cessible by the operator in the various elevations at which he must be positioned to correspond to the various elevations of the hand wheel 19 of the connecting means 13.

At the same time it will also be obvious from the above description that the particular pulley unit construction which I disclose herein may be employed to tighten a cable connection by securing the plate 28 of that particular pulley unit to the post 24 by a single spike 29, and then swinging the plate 28 about this single spike as a fulcrum until the cable reaches the desired tautness, and then inserting the other spike 29 to hold the pulley unit in this adjusted position, and accordingly it will be obvious that I have also disclosed herein a new and improved pulley unit mounting.

In addition, it will also be obvious to those skilled in the art that the embodiment of my invention herein shown and described embraces other advantages not specifically pointed out herein, and also that this particular embodiment of my invention may be variously changed and modified without departing from the spirit of my invention or sacrificing these various advantages. It will therefore be understood that the dis-

closure herein is illustrative only, and that my invention is not limited thereto.

I claim:

In a drilling rig for oil wells comprising vertically reciprocating drill means; means for reciprocating said drill means; actuating means for said drill reciprocating means; and means for controlling from a distance said actuating means and through such actuating means the position of said drill reciprocating means to facilitate adjustment of said drill means on said reciprocating means and accessible at any elevation to which an operator may be required to go in making such adjustment, comprising a support, a first threaded stud carried by said support, a rotatable member mounted on said stud and operatively connected with the control of said actuating means, a second threaded stud carried by said support, a rotatable member on said second stud, and means operatively connecting said first rotatable member and said second rotatable member.

In testimony whereof I hereunto affix my signature.

FOREST J. LEWIS.