July 28, 1925. 1,547,411

M. D. CORLEY

DEEP WELL PUMP

Filed July 11, 1924

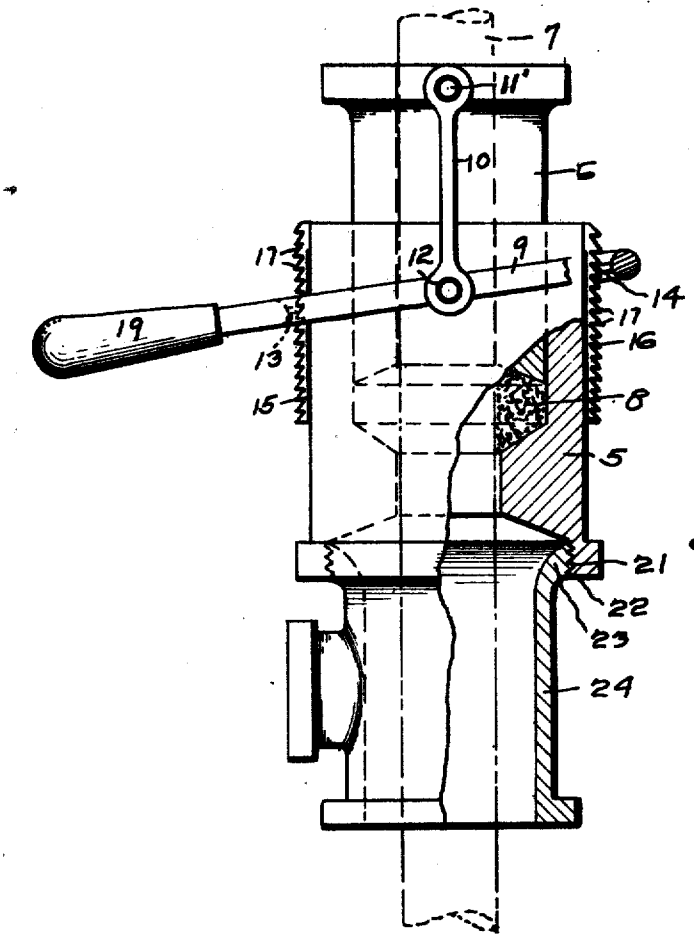

Fig. 1.

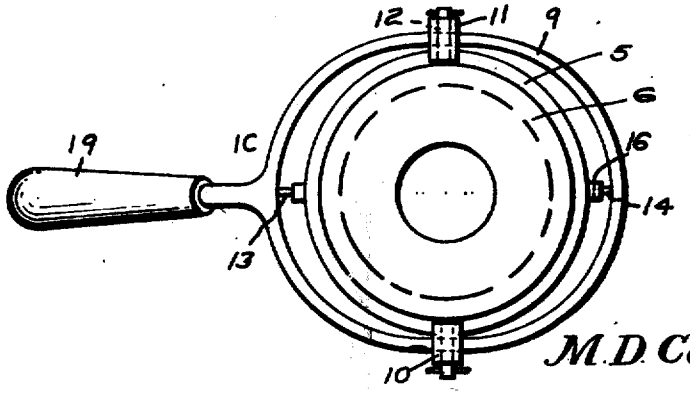

Fig. 2.

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UNITED STATES PATENT OFFICE.

MARSHALL D. CORLEY, OF LOUANN, ARKANSAS, ASSIGNOR OF TWENTY-FIVE PER CENT TO HENRY E. FARABEE, OF CAMDEN, ARKANSAS.

DEEP-WELL PUMP.

Application filed July 11, 1924. Serial No. 725,398.

To all whom it may concern:

Be it known that I, MARSHALL D. CORLEY, a citizen of United States, residing at Louann, in the county of Ouachita and State of Arkansas, have invented certain new and useful Improvements in Deep-Well Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in deep well pump and more particularly to an improved stuffing box and bell mouthed T at the upper end of the pump tubing.

In the construction commonly employed the polish rod of the pump passes through a gland and stuffing box so constructed that the gland is forced downwardly upon the packing by the drawing action of nuts and bolts, or equivalent devices.

One of the objects of the present invention is to provide a gland and actuating mechanism in the nature of a jack by means of which the gland may be forced downwardly upon the stuffing rapidly, effectively and with the assurance that it will be maintained "true" with respect to the polish rod.

Furthermore, in the structures as commonly employed the lower end of the stuffing box is provided with an external thread which screws into the upper end of a conventional T, the lower end of the pump tubing being screwed into the bottom of the T and the side outlet of the T serving as a point of attachment for the pipe which extends to the oil tank or other point to which the liquid is being pumped. When working upon the well and in placing the pump rod in position within the well the polish rod, stuffing box and gland are removed and the pump rod is lowered into the T and tubing. Since the pump rod carries a coupling every few feet it has been found necessary to provide some means for guiding the pump rod into the T and to prevent the coupling from hanging upon the upper edge of said T. Heretofore it has been customary to provide a bell mounted thimble, which, during the operation of lowering the rod into the well was screwed into the upper end of the T. However, it has been found that, since the thimbles are not used except upon the relatively rare occasions when the wall is being worked upon, and they become lost or misplaced, or forgotten and left at the tool house. Therefore it is a further object of the present invention to form a bell with the T itself so that it will always be in place when needed and to so construct the stuffing box that it engages upon this bell mouthed T.

Further objects and advantages of the invention will be set forth in the detailed description which follows:

In the accompanying drawings:

Figure 1 is a view partly in side elevation and partly in section of a combined stuffing box and T constructed in accordance with the invention, and

Figure 2 is a plan view thereof.

Like numerals designate corresponding parts in both of the figures of the drawing.

In the drawing 5 designates the body of the stuffing box, 6 the gland and 7 the conventional polish rod of a deep well pump. A fluid tight joint is effected about the polish rod by packing 8, which is compressed by downward movement of the gland 6. According to the present invention this downward movement is effected by an operating yoke 9. This yoke is connected by links 10 and 11 with the gland, said links being pivoted at 11 to the gland and at 12 to the sides of the yoke. The yoke carries lips or teeth 13 and 14, which may be engaged in the operation of the yoke with spring strips or latches 15 and 16 carrying the downwardly directed teeth 17. By engaging the tooth 14 with the teeth of latch 16 and pressing downwardly upon the handle 19 of the yoke downward movement will be imparted to the gland 6. After the handle has been forced downwardly as far as possible, the yoke is swung upon the links 10 and 11 to carry the teeth 14 out of engagement with the teeth of latch 16 and to bring the tooth 13 into engagement with the teeth of latch 17. By then pulling upwardly upon handle 19 a further downward movement will be imparted to the gland. This operation may be repeated as often as is necessary to sufficiently compress the packing.

The lower end of the stuffing box is internally threaded at 21 instead of being externally threaded as is ordinarily the case and these internal threads are adapted to engage the external threads 22 formed upon a bell mouthed portion 23 of a T 24. Other than the fact that this T is provided with

the bell mouth at its upper end it is in all respects the same as conventional types of T's and serves the same purpose.

It is to be understood that the invention is not limited to the precise construction set forth but that it includes within its purview whatever changes come within the terms or the spirit of the appended claims.

Having described my invention what I claim is:

1. A device of the character described comprising a stuffing box, and gland, a yoke embracing the stuffing box, toothed members carried by the opposite sides of the stuffing box, teeth carried by the yoke and adapted to engage said teeth members of the stuffing box and links pivotally connected to the opposite sides of the yoke and to the gland.

2. A device of the character described comprising a stuffing box, a pair of toothed spring strips carried thereby, a yoke embracing the stuffing box, teeth carried by the yoke and adapted to engage the teeth of said spring strips, and a pair of links upon the opposite sides of the gland, the lower ends of which are connected to the yoke and the upper ends of which are connected to the gland.

3. A device of the character described comprising a stuffing box and gland, the gland being mounted in the stuffing box, toothed spring strips extending vertically along the outer faces of the stuffing box and upon opposite sides thereof, a yoke embracing the stuffing box, teeth carried by the yoke and adapted to engage in the teeth of the spring strips, links pivotally connected to the opposite sides of the yoke and to the gland, and an operating handle carried by the yoke.

In testimony whereof I hereunto affix my signature.

MARSHALL D. CORLEY.