

Feb. 7, 1928.

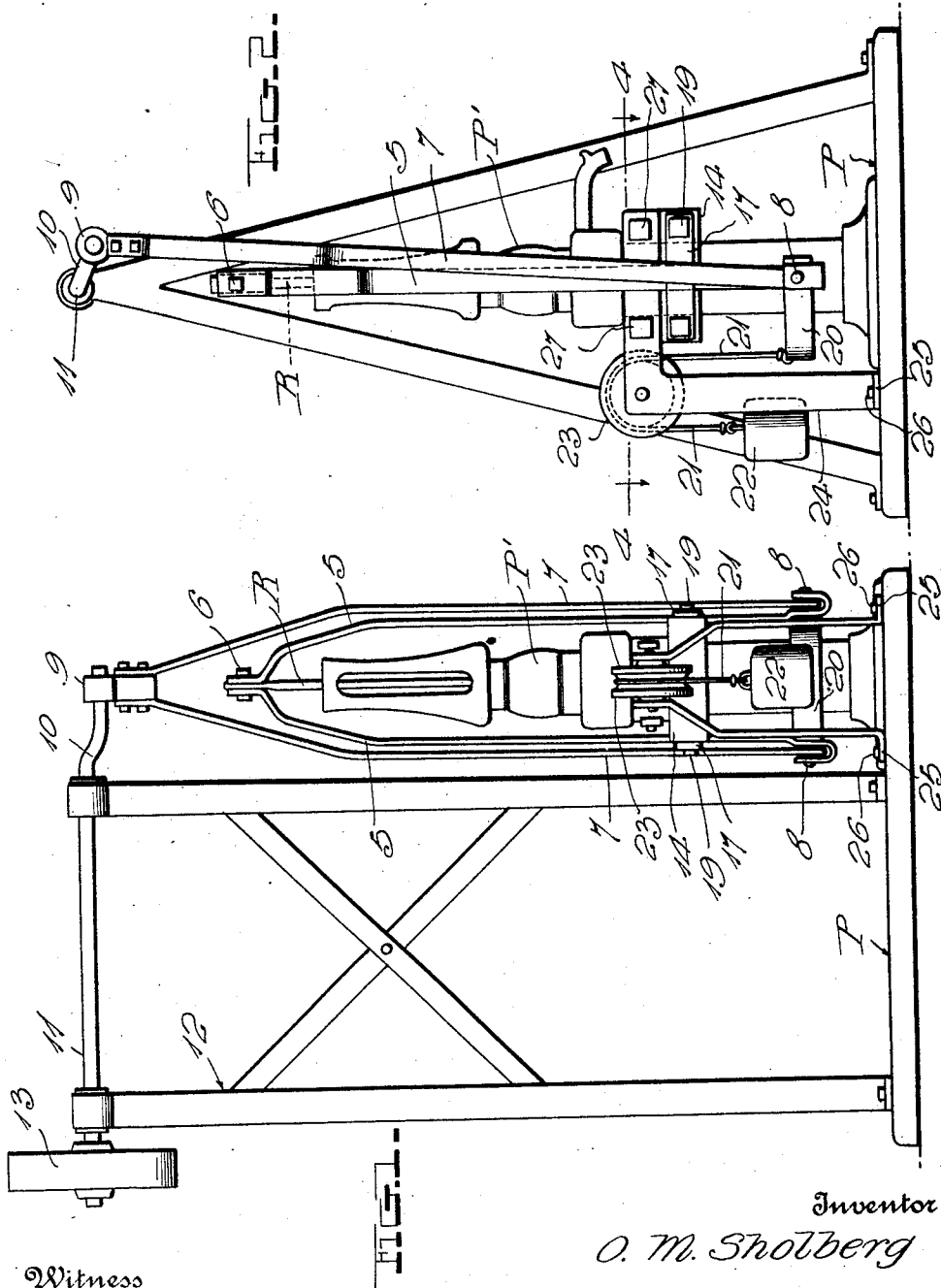
O. M. SHOLBERG

1,658,306

PUMP JACK

Filed Dec. 2, 1926

2 Sheets-Sheet 1



Witness

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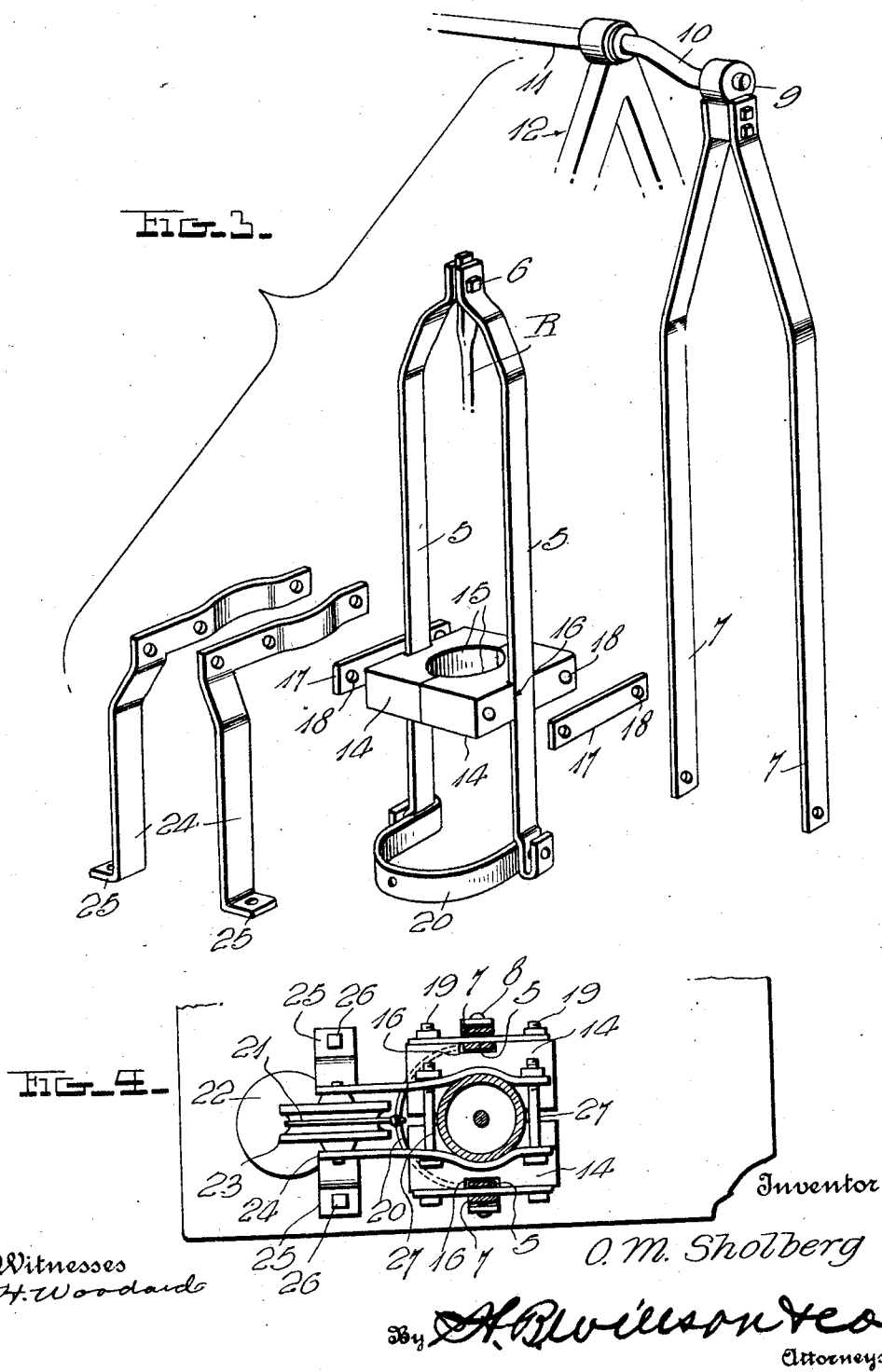
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UNITED STATES PATENT OFFICE.

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PUMP JACK.

Application filed December 2, 1926. Serial No. 152,222.

The invention relates primarily to jacks for use in connection with vertically disposed water pumps of the type whose pump rod projects vertically above the pump body.

Most jacks heretofore devised, exert quite a serious lateral strain upon the pump rod while the latter is being operated, and this strain causes excessive wearing of the rod as well as its guides, and interferes materially with smooth and easy operation of the pump. It is one object of the present invention to provide a pump jack in which this difficulty does not exist.

Another aim is to provide effective means for counterbalancing the pump rod, the well-contained parts carried by said rod, and the pump jack, so that the pump may be operated with about half as much power as is ordinarily needed.

A still further aim is to provide a new and improved construction which may be quickly and easily applied to an ordinary pump.

With the foregoing in view, the invention resides in the novel subject matter herein-after described and claimed, the description being supplemented by the accompanying drawings.

Fig. 1 and Fig. 2 are side elevations looking in different directions, showing the improved jack and counterbalancing means upon a pump.

Fig. 3 is a disassembled perspective view, parts being omitted.

Fig. 4 is a horizontal section on line 4—4 of Fig. 2.

The details of construction herein disclosed, represent the preferred form of the invention and while they will be specifically described, it is to be understood at the outset, that within the scope of the invention as claimed, variations may be made.

P denotes a well platform from which a pump P' rises rigidly, said pump having the usual upstanding pump rod R.

Disposed at opposite sides of the pump body and the pump rod, are two vertical bars 5 having their upper ends directed toward each other and connected with the upper end of said rod by a bolt or the like 6. Guides are provided for the lower ends of these bars, positioned at opposite sides of the pump body, and a pair of additional bars 7 have their lower ends pivoted at 8 to the lower ends of said bars 5, the upper ends of said bars 7, being connected with means for re-

ciprocating them. As this reciprocation takes place, the bars 5 must necessarily move only rectilinearly and hence can exert no lateral stress upon the pump rod R. In the construction herein disclosed, the upper ends of the bars 7 are secured to a bearing 9, which bearing engages a crank 10 on a shaft 11. This shaft may be mounted in any desired manner and if a pump house is provided for the pump, said shaft may be disposed in the upper portion thereof. When the pump is used in the open however, the shaft 11 may well be supported by an appropriate frame structure 12 secured to and rising from the platform P. A gas engine, electric motor or the like may be employed to drive the shaft 11, and I have shown it provided with a belt wheel 13 for engagement with a belt driven by the prime mover.

In providing the guides for the bars 5, I prefer to make use of two blocks 14 disposed at opposite sides of the pump body and having seats 15 in their inner sides, to jointly receive said body. The outer sides of these blocks are formed with vertical grooves or notches 16 which slidably receive the bars 5, and these notches or grooves are spanned by plates 17, so that the latter co-operate with said notches or grooves in forming effective guides for the bars. The blocks 14 and plates 17 are formed with alined bolt holes 18, and bolts 19 are passed through these holes, so as to hold said plates and blocks in assembled relation, as well as rigidly clamping the blocks against the pump body. These details of construction are not only simple and inexpensive, but adapt the device for quick and easy attachment and moreover are very desirable and efficient when installed.

In the present showing, a U-shaped member 20 is secured to the lower ends of the bars 5, and one end of a cable 21 is secured to this member, the other end of the cable being provided with a counterbalancing weight 22. This cable passes over a sheave 23 and its weight is sufficiently heavy to substantially counterbalance the weight of the rod R, the pump jack parts which move vertically with the rod, and the well-contained portions of the pump connected with this rod. By the use of the counterbalancing weight and cable, only about half as much power is necessary to operate the pump, as is needed with the average form of jack.

The sheave 23 is rotatably supported be-

tween a pair of inverted L-shaped bars 24 having feet 25 at their lower ends to be secured by lag screws or the like 26 to the pump P'. The lateral ends of these bars 5 are preferably bowed away from each other to some extent as shown in Figs. 3 and 4 and disposed at opposite sides of the pump body, and by means of bolts 27, said lateral ends may be tightly clamped to said body. 10 Thus, the sheave 23 will be properly supported and it will be seen that the bars 24 may be quickly and easily attached to the pump and platform.

The entire assembly is exceptionally simple and inexpensive, yet will be efficient, reliable and in every way desirable. On account of such existing advantages, the details disclosed are preferably followed. However, within the scope of the invention 20 as claimed, variations may be made.

I claim:—

1. A jack for a pump of a type having a fixed body and a rectilinearly movable pump rod projecting therefrom; said jack 25 comprising a pair of parallel bars disposed longitudinally of said body and rod and at opposite sides thereof, means for connecting one end of said bars to said pump rod, guides rigidly mounted at opposite sides 30 of said body and slidably engaging the other ends of said bars, and means connected with said bars for reciprocating the same, said guides and rod insuring that the bars shall move rectilinearly to exert no 35 lateral stress on the rod.

2. A jack for a pump of a type having a fixed body and a rectilinearly movable pump rod projecting therefrom; said jack 40 comprising a pair of parallel bars disposed longitudinally of said body and rod and at opposite sides thereof, means for connecting one end of said bars to said pump rod, guides rigidly secured to opposite sides

of said body and slidably engaging the other ends of said bars, and means connected with said bars for reciprocating the same, said guides and rod insuring that the bars shall move rectilinearly to exert no lateral stress on the rod. 45

3. A jack for a pump of a type having 50 a vertical body and a vertically movable pump rod rising from said body; said jack comprising a pair of vertical bars disposed at opposite sides of the body and rod, means for connecting the upper ends of said bars 55 to the rod, stationary guides for the lower portions of said bars, a pair of additional vertical bars at the outer sides of the first named bars, said additional bars being pivotally connected with the lower ends of the 60 first named bars, and means connected with the upper ends of said additional bars for reciprocating the latter.

4. In a pump jack, a pair of blocks for disposition at opposite sides of a pump body, 65 said blocks having seats in their inner sides to engage said pump body and being provided with guides for pump actuating bars, and means for drawing said blocks into clamping relation with the pump body to 70 fixedly secure them thereto.

5. In a pump jack, a pair of blocks for disposition at opposite sides of a pump body, said blocks having seats in their inner 75 sides to engage said pump body and being formed in their outer sides with notches, plates spanning said notches and co-operating therewith in forming guides for pump actuating bars, said plates and blocks having 80 alined bolt holes, and bolts passing through said holes for holding the plates and blocks in assembled relation and for clamping said blocks to the pump body.

In testimony whereof I have hereunto affixed my signature.

OLE M. SHOLBERG.