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J. MINNICH

1,964,670

PUMPING JACK

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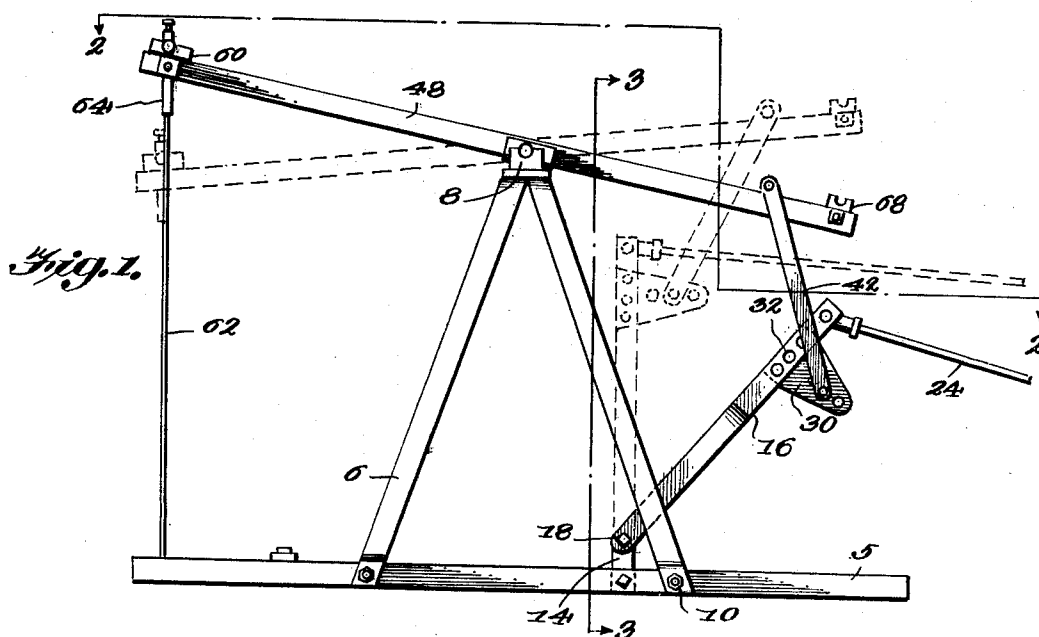
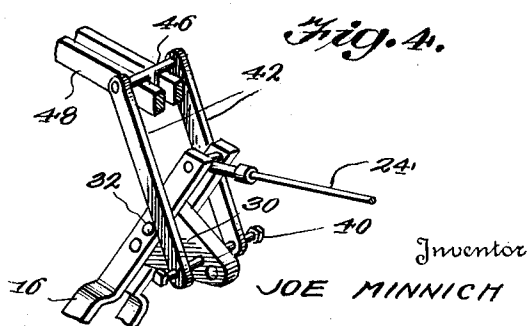
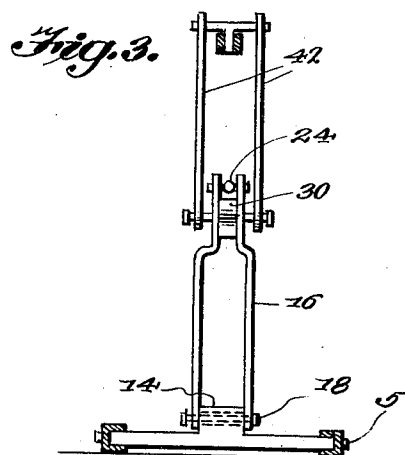
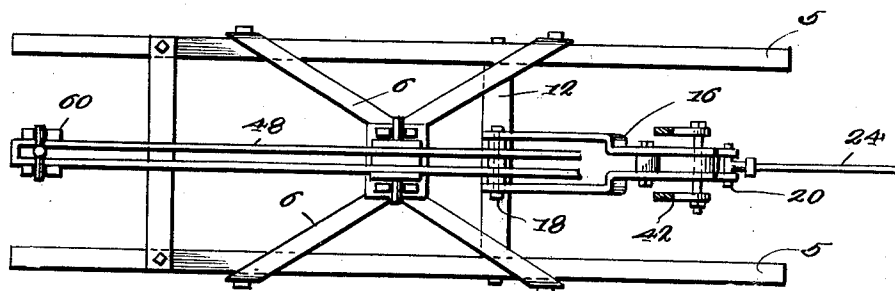


Fig. 2.



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UNITED STATES PATENT OFFICE

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PUMPING JACK

Joe Minnich, Bryson, Tex.

Application July 11, 1932, Serial No. 621,963

1 Claim. (Cl. 74—14)

This invention relates to pumping jacks especially adapted for use in connection with reciprocating pumps.

Briefly stated, an important object of this invention is to provide a pumping jack having simple and efficient means for transmitting the motion of a pumping power to the polish rod of a deep well pump to the end that binding of the parts is prevented and a full working stroke is assured.

A further aim is to provide a pumping jack of the character specified in which the several parts thereof are easily assembled and are individually accessible for repair or replacement and in which the arrangement of parts is such that the same may be compactly arranged for transportation on a truck or the like to the point of use.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of the improved pumping jack in use,

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1,

Figure 3 is a vertical transverse sectional view taken on line 3—3 of Figure 2,

Figure 4 is a fragmentary perspective illustrating the connection between upper and lower motion transmitting links embodied in the invention.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 5 designates a base consisting of spaced parallel members of suitable cross-sectional formation and of an appropriate material such, for example, as metal.

As shown in Figures 1 and 2, the base 5 has connected thereto a standard 6 commonly known as a Samson post and consisting of supports secured to the spaced parallel base members 5 and converging toward the upper portions thereof to provide a resting and attaching surface for the bearings 8. More specifically, the converging supports forming the standard 6 consist of legs converging toward the upper portions thereof and having the lower portions thereof secured by bolts 10 or other fastening devices to the base 5. In other words, the standard 6 is a four-legged structure secured at spaced points to the parallel base members 5 so that a firm and rigid connection between the standard and the base

is provided, such connection being inward of the ends of the base member.

Referring now to Figure 2 it will be seen that the spaced parallel members of the base 5 are joined by transverse beams 12, one of which is formed with an upstanding apertured ear 14 to which the forked or bifurcated lower portion of a motion transmitting link 16 is horizontally pivoted as indicated at 18.

By forking or forming the lower portion of the link 16 from a pair of spaced parallel attaching members, the link 16 is caused to rock about the longitudinal axis of the pin 18 and is firmly held against lateral tilting or yielding under the influence of the power applied thereto.

In explaining this point, attention is invited to Figure 1; in which it is illustrated that the upper portion of the link 16 is formed with a transverse opening receiving the shank of an attaching arm 20, the arm being extended laterally from the link and having pivotal connection with one of the power lines 24 of a pumping power not shown. To those acquainted with the art it will be apparent that the power line 24 is reciprocated by a remote pumping power and the motion thus imparted to the line 24 is utilized to rock the link 16 and, as suggested previously, such movement of the power line is prevented from tilting the link 16.

It is clearly shown in Figures 1 and 4 that a bearing block 30 is confined between the sides of the link 16 and a fastening bolt 32 is extended through the block and the spaced sides of the link 16 to securely connect these parts.

Attention is now invited to Figure 4 in which it is illustrated that the bearing block 30 is provided with a transversely extending connecting pin 40 to which the lower terminal portions of spaced parallel links 42 are horizontally pivoted. The upper portions of the links 42 are connected to the walking beam 48 through the intervention of a pivot element 46, and, it will be seen that the connection between the pivot element 46 and the link 42 provides for adjustment of the relation of the links 42 to the walking beam.

The forward portion of the walking beam is shown to be formed with the usual saddles 60 for connection with the polish rod 62 through the intervention of a conventional or other polish rod 64.

The rear portion of the walking beam is provided with a bearing 68 for attachment of a counterbalance should one be desired or required.

In operation, the improved pumping jack is set up at the well and when the laterally pro-

jecting attaching arm 20 is attached to the power line 24 as shown in Figure 1, the beam is rocked to bring about reciprocation of the polish rod.

It has been found that the highly simplified arrangement of the various motion transmitting elements provides for the efficient transmission of the power from the power line 24 to the polish rod 26 and at the same time, such arrangement allows of the easy setting up of the jack and allowing of the ready inspection and individual removal of the parts for the purpose of renewal.

Having thus described the invention, what is claimed as new is:—

A pump jack of the class described comprising a base, a standard rising from said base and consisting of legs secured at their lower ends to the base and a bearing supported by the upper ends of the legs, a walking beam pivoted intermediate its length to said bearing and having side bars spaced from each other, means at the rear end of said walking beam for engaging a polish rod, a bearing for a counterweight at the front end of said walking beam, and means for

controlling movement of said walking beam consisting of lower links pivoted to said base and spaced transversely from each other, a block secured between said links in spaced relation to the upper ends thereof and projecting forwardly from the links, an arm pivoted between the upper ends of said links and projecting forwardly over said block for connection with a power line, upper links pivotally connected with the forward portion of said block and extending upwardly at opposite sides of the lower links and walking beam, and a pivot pin connecting upper ends of the upper links and slidably resting upon the side bars of said walking beam back of the bearing at the front ends thereof, said pin having a depending arm engaged between side bars of the walking beam to limit transverse movement of the links and walking beam relative to each other, and the bearing at the front end of the walking beam constituting an abutment to engage the pivot pin and limit sliding movement of the pin forwardly along the walking beam.

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25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150