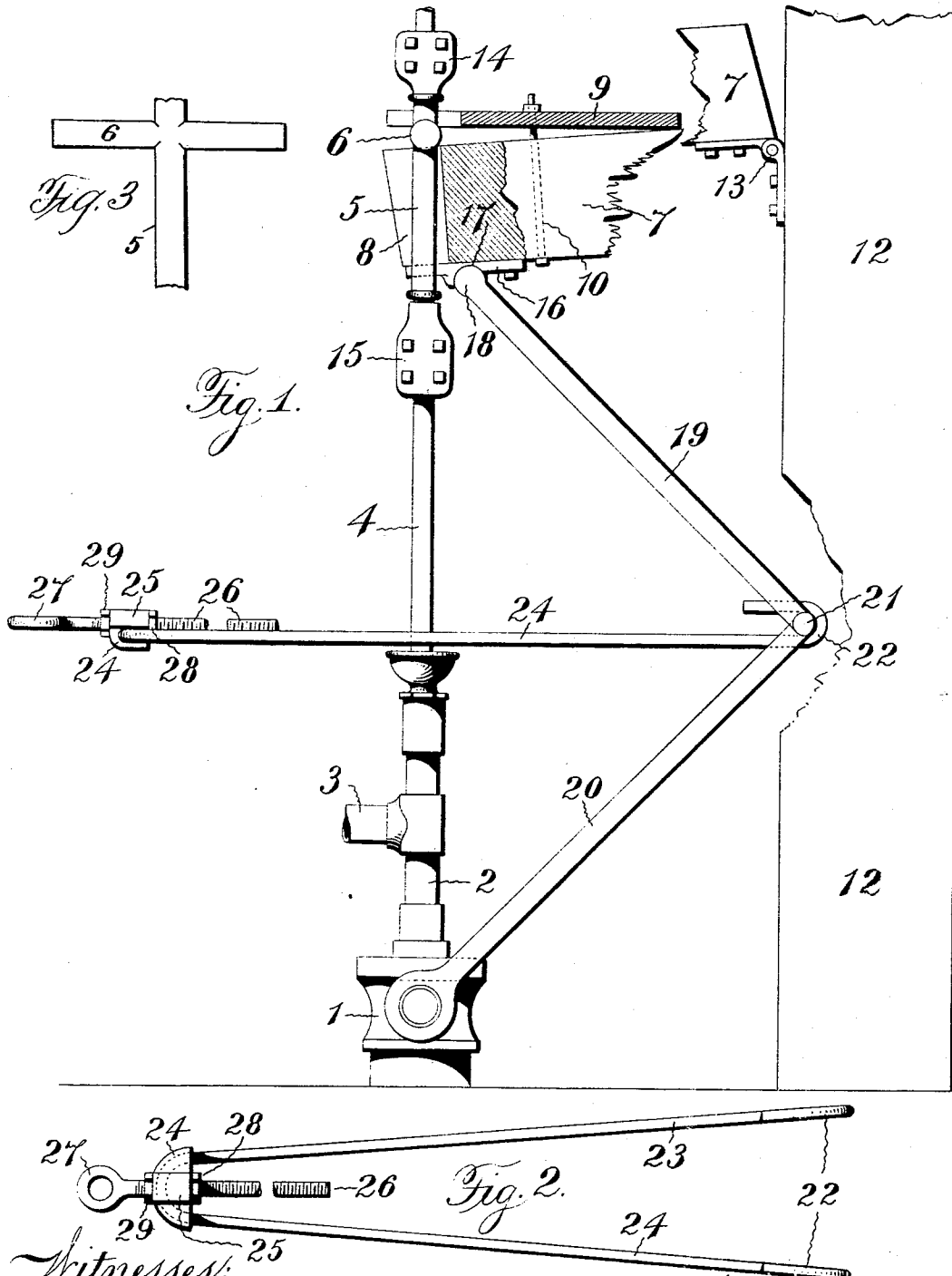


(No Model.)

T. G. LANEY.
PUMPING JACK FOR OIL WELLS.

No. 586,501.

Patented July 13, 1897.



Witnesses:
Jas. Hutchinson.
Albert B. Norris.

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UNITED STATES PATENT OFFICE.

THOMAS G. LANEY, OF LIMA, OHIO.

PUMPING-JACK FOR OIL-WELLS.

SPECIFICATION forming part of Letters Patent No. 586,501, dated July 13, 1897.

Application filed November 12, 1896. Serial No. 611,854. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. LANEY, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have
5 invented new and useful Improvements in Pumping-Jacks for Oil-Wells, of which the following is a specification.

This invention relates to the pumping-jacks described and shown in Letters Patent numbered 569,926, issued to me October 20, 1896,
10 wherein toggle-levers connected with the polish-rod of an oil-well pump are extended through the medium of a cable passing over pulleys mounted on a suitable support and
15 connected with the jointed extremities of the toggle-levers in such manner that when the cables are drawn or pulled the toggle-levers are extended and the polish-rod is raised.

The chief objects of my present invention
20 are to simplify the prior construction referred to and to provide novel, efficient, and economical means for working a walking-beam to which the polish-rod of an oil-well pump is pivotally connected, whereby the pulleys
25 and cables employed in my former pumping-jack are dispensed with and a less complex construction and arrangement of parts are provided.

To accomplish these objects, my invention
30 consists in the features of construction and in the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

35 Figure 1 is a side elevation of a pumping-jack constructed in accordance with my invention. Fig. 2 is a detail plan view of the bifurcated link designed to be connected with the polish-rod for extending the toggle-levers
40 to raise the walking-beam and thereby elevate the polish-rod, and Fig. 3 is a detail front view of the cross-head by which the polish-rod is connected with the walking-beam.

In order to enable those skilled in the art
45 to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates the head of an oil-well-pump casing, on which head is mounted
50 a hollow column 2, which has a lateral discharge or outlet 3. The polish-rod 4 extends

through the hollow column in the usual manner and at its upper end portion passes through a pipe or tube 5, having a cross-head 6, journaled in a bearing at the upper side of
55 a walking-beam 7, of any desired construction or type. The outer end of the walking-beam is recessed or slotted, as at 8, to accommodate the pipe or tube 5, and to the upper side of the walking-beam is applied a plate 9, which
60 is bifurcated to extend over and retain the cross-head 6 in operative position in its bearing. The plate 9 may be clamped or connected to the walking-beam by a tie-bolt 10, one or more. The walking-beam 7 is hinged or pivoted
65 at its inner end to a samson-post 12 of any suitable construction and of any required height. The walking-beam may be hinged or pivoted to the samson-post through the medium of an ordinary hinge 13, composed
70 of two leaves jointed together and secured, respectively, to the walking-beam and post. I do not, however, limit myself to any particular devices for hinging or pivoting the
75 walking-beam to the post, as any means for this purpose may be employed which will permit the walking-beam to be swung or vibrated in a vertical plane for the purpose of raising and lowering the polish-rod.

The polish-rod extends through suitable
80 two-part clamps 14 and 15, arranged, respectively, at the upper and lower ends of the vertical pipe or tube 5, which constitutes part of the cross-head, in such manner that the polish-rod can be vertically adjusted and be
85 axially rotated whenever necessary. When the clamps are tightened, the polish-rod will be secured in a fixed position relatively to the pipe or tube of the cross-head, and consequently when the latter is raised and lowered
90 by the walking-beam the polish-rod will be correspondingly moved.

The under side of the walking-beam, at the outer end thereof, is provided with a metallic bearing-plate 16, having a transverse groove
95 17, which is semicircular in cross-section for the purpose of receiving the circularly-shaped upper end 18 of toggle-levers 19 and 20, jointed together at one extremity, as at 21. The lower end of the lever 20 is pivoted, as here
100 shown, to the head 1 of the oil-well-pump casing, but obviously the lower end of this

lever can be pivoted to a bracket extending from the head or to any other support suitable for the purpose in hand.

The pivot 21, which connects the two toggle-levers 19 and 20 together, is adapted to enter and engage the hook-shaped ends 22 of a link designed to connect with a pull-rod (not shown) which in practice is operated by an engine. The link referred to is preferably made of a single piece bent intermediate its extremities to provide two diverging arms or members 23 and 24, which pass at opposite sides of the polish-rod. The link is suitably connected with a block or head 24, having a socket 25, through which passes a screw-threaded stem 26, having at its outer end an eye 27 or equivalent device designed to connect with the pull-rod of the engine. The screw-threaded stem 26 is provided at opposite ends of the socket 25 with screw-nuts 28 and 29, whereby the stem can be adjusted lengthwise and locked in any desired position for the purpose of varying the lengths of the strokes of the pumping-jack, as will be obvious.

When the link connection between the pull-rod and the toggle-levers is drawn or pulled in one direction, the jointed or pivoted ends of the toggle-levers will be moved toward the polish-rod, thereby extending the toggle-levers and forcing the walking-beam to rise for the purpose of elevating the polish-rod. On the back stroke of the link the weight of the walking-beam and polish-rod will cause the latter to descend, and thus a reciprocating motion is imparted to the pump-piston.

The height at which the walking-beam is hinged or pivoted may be varied, so that it is possible for the link connected with the toggle-levers to be placed in such plane that the pull will be approximately in a straight line toward the engine or motive power employed to actuate the pumping-jack.

My present invention provides very simplified means whereby the walking-beam of an oil-well pump is operated for the purpose of working the pump and a less complicated construction and arrangement of parts are provided than those described and shown in my former patent referred to.

Having thus described my invention, what I claim is—

1. The combination with the head of a well-pump casing, a walking-beam, and a polish-rod operated by the walking-beam, of pivots on the head of the pump-casing, jointed toggle-levers engaged with the pivots on the

head of the pump-casing and pivotally engaged directly with said walking-beam, and means for connecting the toggle-levers with a pull-rod, substantially as described.

2. The combination of a hinged or pivoted walking-beam, a cross-head pivotally mounted thereupon, a polish-rod adjustable through the cross-head, jointed toggle-levers pivoted, respectively, to the walking-beam and to a suitable support, and a link connected with the toggle-levers and having means to connect with a pull-rod, substantially as described.

3. The combination of a hinged or pivoted walking-beam, a cross-head pivoted thereupon, a polish-rod engaged with the cross-head, a pump-casing having a head, jointed toggle-levers pivoted, respectively, to the walking-beam and to the head of the pump-casing, and a link connected with the toggle-levers and having means to connect with a pull-rod, substantially as described.

4. The combination of a hinged or pivoted walking-beam, a polish-rod, connections between the polish-rod and the walking-beam, jointed toggle-levers pivoted, respectively, to the walking-beam and to a suitable support, and a bifurcated link passing at opposite sides of the polish-rod and connected with the toggle-levers, substantially as described.

5. The combination of a hinged or pivoted walking-beam, a cross-head pivotally mounted thereupon, a polish-rod connected with the cross-head, a pump-casing having a head, jointed toggle-levers pivoted, respectively, to the walking-beam and to the head of the pump-casing, and a bifurcated link passing at opposite sides of the polish-rod and connected with the toggle-levers, substantially as described.

6. The combination of a hinged or pivoted walking-beam, a polish-rod, connections between the polish-rod and the walking-beam, jointed toggle-levers pivoted, respectively, to the walking-beam and to a suitable support, and a link having at one end hooks to engage the toggle-levers and at the other end a lengthwise-adjustable stem to engage a pull-rod, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS G. LANEY.

Witnesses:

JAS. W. HALFHILL,
J. C. RIDENOUR.