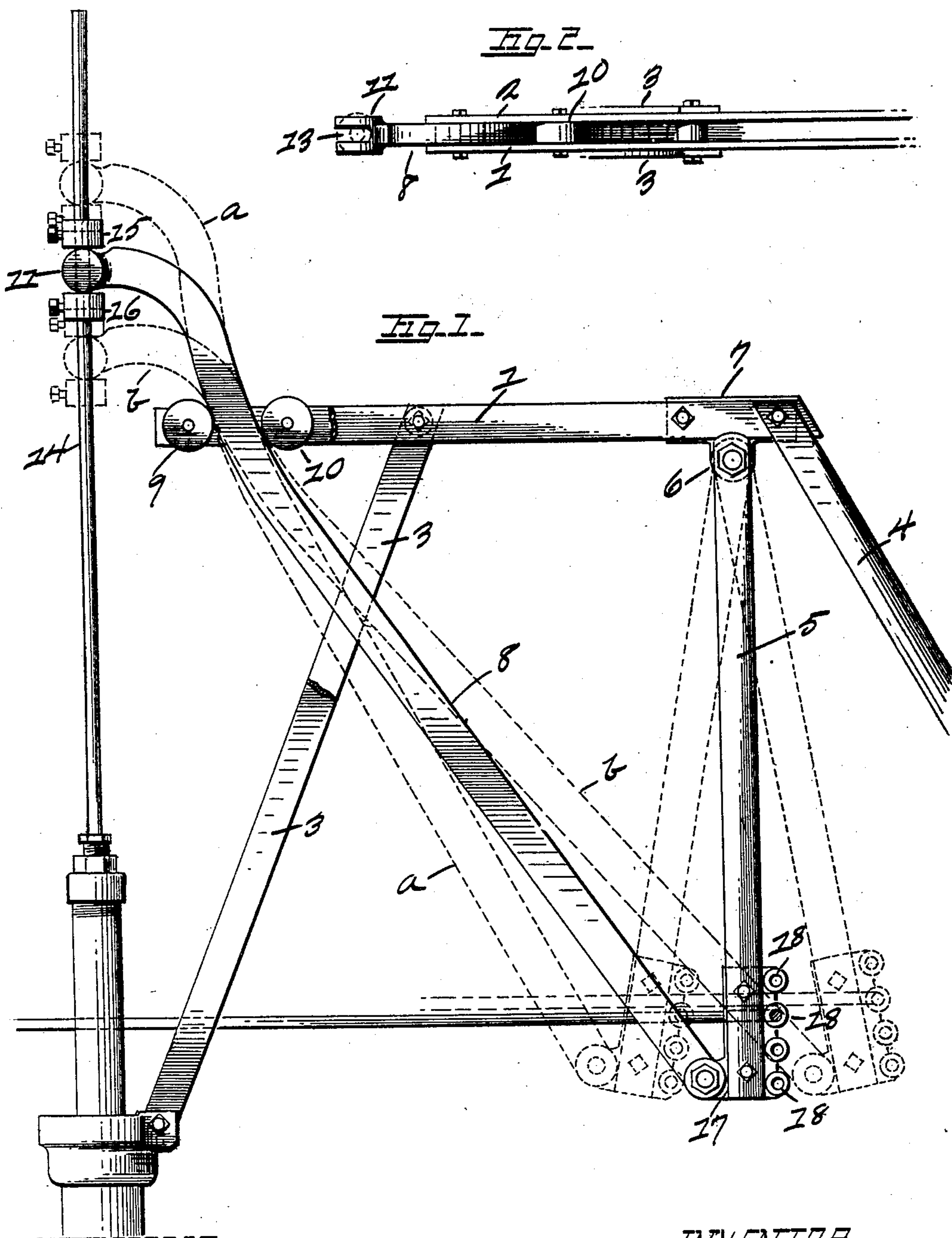


No. 774,475.

PATENTED NOV. 8, 1904.

J. E. HUDSON.
PUMPING LEVER.
APPLICATION FILED NOV. 12, 1903.

NO MODEL.



WITNESSES

Jo. Cunningham.
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INVENTOR _____

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By Carl S. Keller
att'y.

UNITED STATES PATENT OFFICE.

JOSEPH E. HUDSON, OF TOLEDO, OHIO.

PUMPING-LEVER.

SPECIFICATION forming part of Letters Patent No. 774,475, dated November 8, 1904.

Application filed November 12, 1903. Serial No. 180,802. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. HUDSON, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Pumping-Levers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention has reference to a pumping-lever adapted for pumping oil or other deep wells; and it has for its object to provide simple, inexpensive, and easily-operated means for reciprocating the polish-rod and the pump-rods connected therewith.

In carrying out my invention I provide novel means whereby the pumping-lever at its immediate point of attachment to the polish-rod is caused to reciprocate in a straight line, thereby eliminating any tendency to pull the polish-rod in a lateral direction.

To this end the invention consists in the novel combination and arrangement of the parts hereinafter shown, described, and defined in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation showing the arrangement and application of my invention, the stationary frame being partly broken away. Fig. 2 is a plan view of the operating-arm of the lever, showing the construction for guiding the same in the frame.

Referring to the parts, the stationary frame consists of the upper horizontal bars 1 and 2, suitably spaced apart and supported at their forward ends by braces 3 and at their rear ends by braces 4, the former being preferably connected to the casing-head, the latter being secured and supported upon a suitable base resting upon the ground, the lower ends being spread apart to insure rigidity.

5 is an upright arm formed by two parallel bars spaced apart and fulcrumed at its upper end at 6 to the stationary frame, a suitable casting 7 being provided for this purpose.

8 is an operating-arm, pivoted at one end to the lower end of the upright arm 5, and the upper end of said arm is slidably mounted and guided between the forward ends of the bars 1 and 2, antifriction-rollers 9 and 10 being provided on opposite sides thereof to facilitate its movement and to maintain the same in proper position. The portion of the arm 8 adapted to operate between the rollers 9 and 10 is bent in an unbroken curve in a rearward direction, the form of the curve being such that the free end 11 of the arm 8, engaging the polish-rod, travels in a straight line. This engaging end is bifurcated or recessed at 13 to receive the polish-rod 14.

15 and 16 are collars arranged upon the polish-rod, being secured in place by set-screws, the end 11 of the arm 8 taking a position between them. The upper and lower faces of the end 11 of the arm 8 are arc-shaped to insure contact with the collars upon the polish-rod.

At its lower end the upright arm 5 is provided with a casting 17, arranged with equidistant perforations 18 for the attachment of a surface rod, the length of the pump-stroke being thereby adjusted.

From the foregoing description the improved operation of my invention should be understood. In Fig. 1 the extreme raised and lowered positions of the operating-arm and the correspondingly-altered positions of the vertical arm are shown in dotted lines *a* and *b*, respectively, the same illustrating the operation of the invention. The arrangement disclosed is simple, inexpensive, easily operated, being capable of operation with a minimum expenditure of power.

The novelty, utility, and advantages of the invention will be apparent. It will be appreciated that the parts and general arrangement of the structure may be modified within a wide range without departing from the spirit and scope of my invention. For instance, I may arrange curved guideways immovably secured upon the stationary frame and provide a roller or rollers upon the operating-arm to travel along said guideways, both arrangements being calculated to effect the

movement of the engaging end of the operating-arm in a straight line.

Having described my invention, what I claim, and desire to secure by Letters Patent, 5 is—

1. In a pumping-lever, the combination with the polish-rod of a well, of a stationary frame, an upright arm fulcrumed upon said frame, an operating-arm pivoted at one end to said 10 upright arm and adapted to directly engage the polish-rod at its other end, and means for guiding the operating-arm in its movement to cause the end thereof which engages the polish-rod to travel in a straight line, substan- 15 tially as described.

2. In a pumping-lever, the combination with the polish-rod of a well; of a stationary frame, an arm fulcrumed on the frame, an operating-arm pivoted to the lower end of said arm 20 and having a curved portion slidably guided through the frame to cause the free upper end thereof which engages the polish-rod to travel in a straight upright line and its lower end to

travel in substantially a horizontal line, as and for the purpose described. 25

3. In a pumping-lever, the combination with the polish-rod of a well, of a stationary frame, an upright arm fulcrumed in said frame, an operating-arm pivoted to the lower end of said upright arm and movable therewith in sub- 30 stantially a horizontal line, said operating-arm having a curved portion extending through the frame and adapted at its upper end to engage the polish-rod and move in a vertical line therewith, and rollers mounted 35 upon the frame adapted to guide the operating-arm to permit said different movements of its opposite ends, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two 40 witnesses.

JOSEPH E. HUDSON.

Witnesses:

CARL H. KELLER,
EDWARD O. MILLER.