No. 806,140. PATENTED DEC. 5, 1905.

E. F. HELM.

PUMPING JACK.

APPLICATION FILED JAN. 19, 1905.

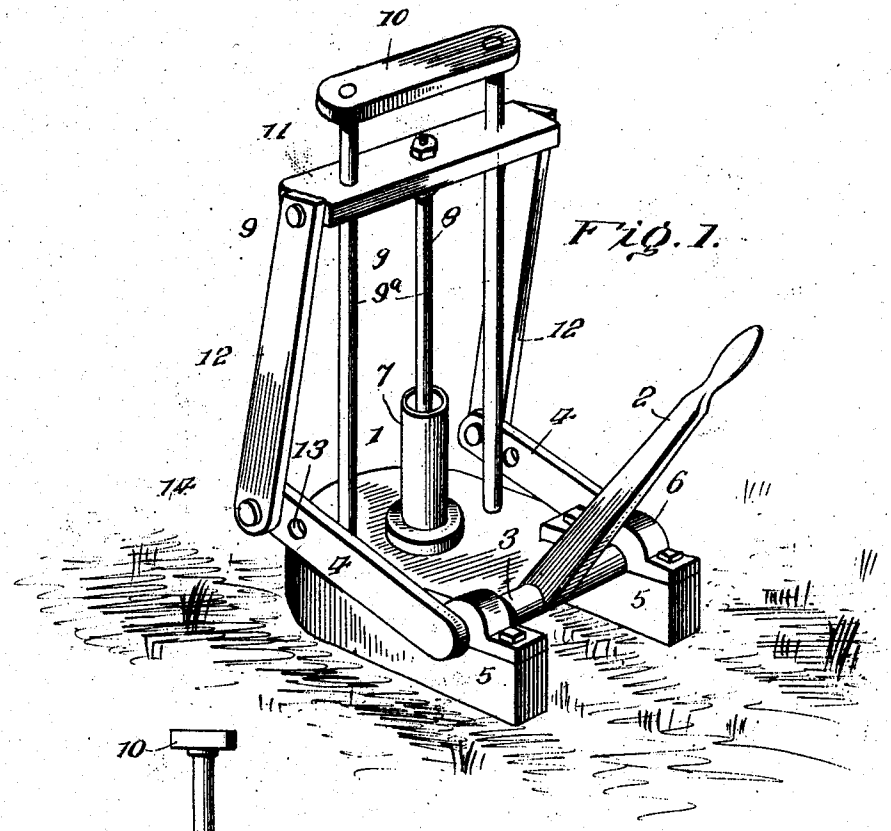


FIG. 1.

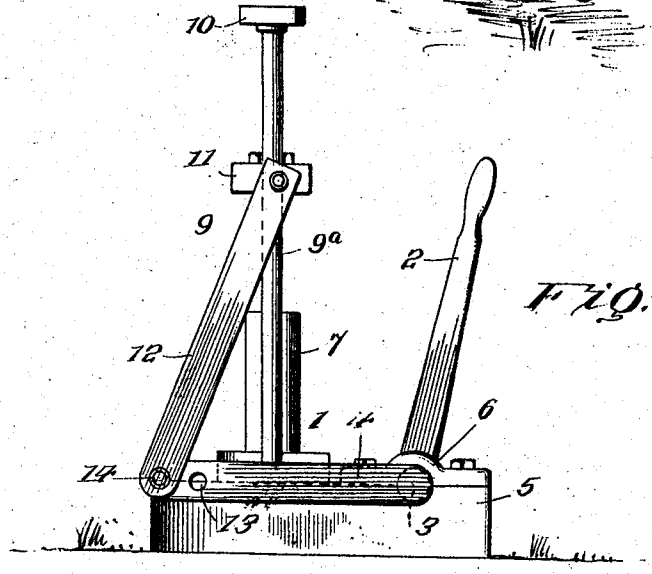


FIG. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

EUGENE F. HELM, OF MONTPELIER, INDIANA.

PUMPING-JACK.

No. 806,140. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed January 19, 1905. Serial No. 241,841.

To all whom it may concern:

Be it known that I, EUGENE F. HELM, a citizen of the United States, residing at Montpelier, in the county of Blackford and State of Indiana, have invented certain new and useful Improvements in Pumping-Jacks, of which the following is a specification.

This invention relates to improvements in oil-well-pumping apparatus, and comprises, essentially, a special form of pumping-jack.

The chief design of the invention is to secure a jack of this type embodying a general simplicity of structure and having a peculiar desirable arrangement of parts whereby the requisite power is obtained for pumping purposes.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

The preferred embodiment of the invention is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a pumping-jack embodying the invention. Fig. 2 is a side elevation.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the drawings, the numeral 1 indicates the casing-head of a well, and the jack is mounted upon this head. The jack is of the bell-crank type and consists of a bell-crank lever of peculiar construction, comprising the lever 2, extending upwardly from a shaft 3, and from the ends of the shaft 3 extend crank-arms 4, arranged at the customary angle with reference to the said lever 2. The shaft 3 is mounted in bearings provided in spaced extensions 5, projecting laterally from the casing-head 1, and bearing-plates 6 are attached to the upper portions of the extensions 5, coöperating therewith to form a bearing for the shaft aforesaid. The well-tube 7 extends upwardly through the casing-head 1 in the usual manner, and a pump-rod 8 operates therein, being operably connected with the crank-arms 4 for actuation thereby. A vertical guide-frame 9 extends upwardly from the casing 1, and said frame consists of spaced uprights 9^a, connected at their upper ends by a transverse bar 10. The frame 9 is rigidly mounted upon the casing-head and a sliding cross-head 11 is mounted upon the uprights 9^a of the frame, said uprights passing through vertical openings in the cross-head aforesaid. The cross-head 11 is adapted for free vertical movement upon the guide-frame 9 and is connected between its ends and preferably at a point between the uprights 9^a with the pump-rod 8. Links or bars 12 are connected at the upper ends thereof with the cross-head 11, and the lower extremities of these members 12 are attached pivotally to the ends of the crank-arms 4. The members 12 constitute a pivotal connection between the crank-arms 4 and the cross-head 11, and when the lever 2 is actuated vertical movement is thus imparted to the cross-head, effecting the necessary operation of the pump-rod 8. The bars 12 have adjustable connection with the arms 4, and for this purpose said arms 4 are provided with a plurality of openings 13, through any one of which pivot-pins 14, by which the members 12 are attached to the arms, may be passed in order to afford an adjustable connection to increase or decrease the movement of the cross-head in a manner which will be readily apparent. In other words, by adjustment of the pivots 14 the leverage of the arms 4 may be increased or decreased in an obvious manner.

The surface-rod (not shown) is of course attached to the upper extremity of the lever 2 in the usual manner and connected with any suitable source of power for transmitting motion to the lever 2 in order to actuate the several parts of the device. The guide-frame 9 is so mounted that the pump-rod is not liable to be bent, but will maintain its proper alined position with reference to the pump-barrel under all conditions of service, this being necessary in devices of this class.

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

In a pumping-jack, the combination of a casing-head, a pump-rod, extensions projecting from the casing-head, a shaft mounted in said extensions, a lever projecting upwardly from said shaft, crank-arms extending from the ends of the shaft in spaced relation and provided longitudinally thereof with a plurality of openings, a vertical guide-frame projecting upwardly from the casing-head and embodying spaced uprights, a sliding cross-head provided with openings receiving the spaced

uprights of the guide-frame and connected at a point intermediate its ends with the pump-rod, and bars connected at their upper ends with the ends of the cross-head and at the lower ends with the crank-arms, said bars or links having adjustable pivotal connection with the crank-arms.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE F. HELM. [L. S.]

Witnesses:
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