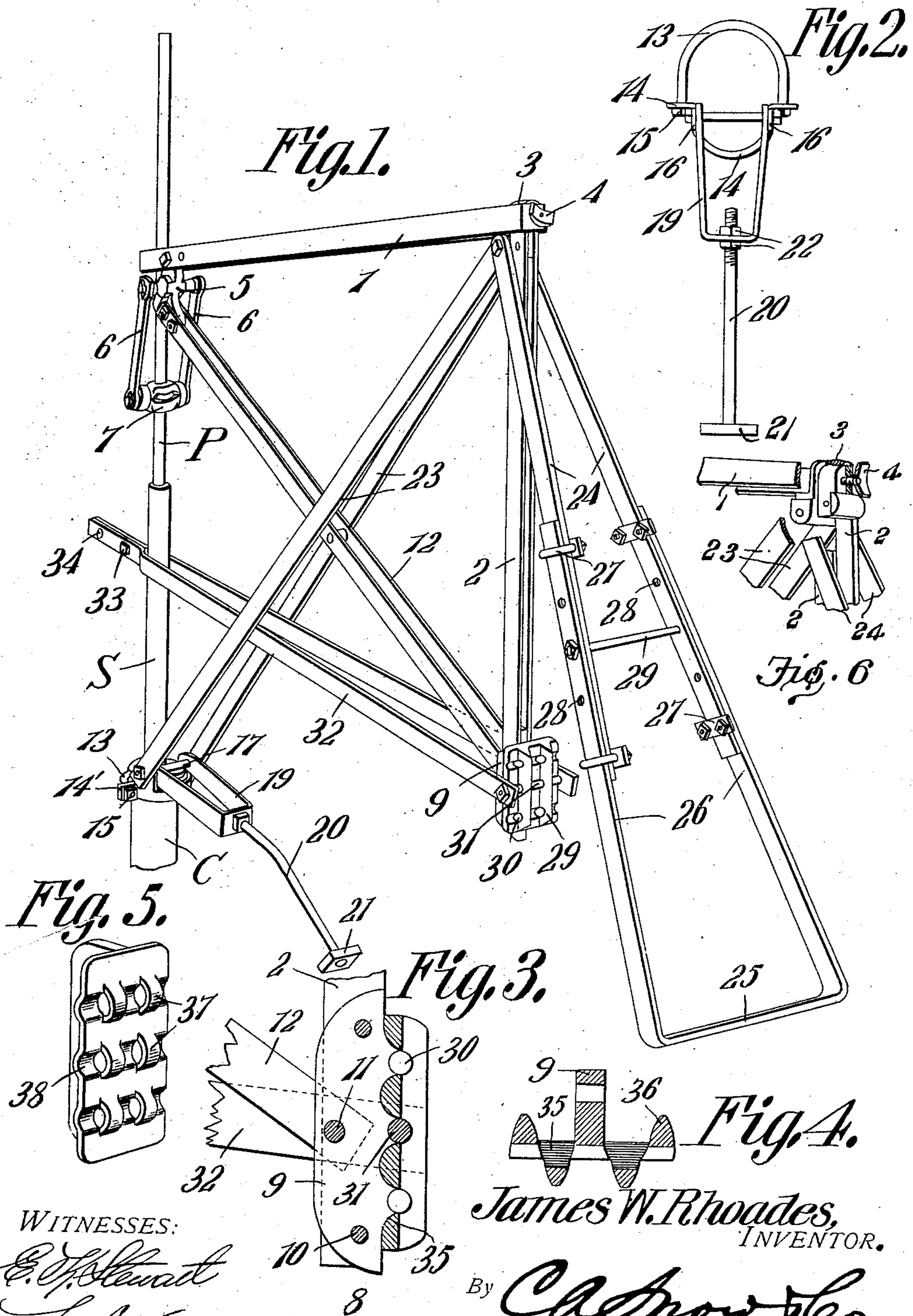


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J. W. RHOADES.
OIL WELL JACK.
APPLICATION FILED JULY 16, 1906.



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UNITED STATES PATENT OFFICE.

JAMES WILLIAM RHOADES, OF FOSTORIA, OHIO.

OIL-WELL JACK.

No. 840,374.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES WILLIAM RHOADES, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Oil-Well Jack, of which the following is a specification.

This invention relates to oil-well jacks.

The object of the invention is to provide improved means for anchoring the supporting-frame and means for adjusting the rock-beam, thereby to center the polish-rod and maintain the same in a perpendicular position.

A further object of the invention is to provide an adjustable anchor for attachment to the casing-head, whereby the latter may be adjusted to accommodate the polish-rod, and thus prevent undue friction between the parts.

A further object is to provide an improved coupling-block for connecting the rock-beam, draw-bar, and diagonal braces, said block being provided with a plurality of spaced bearings whereby the rock-beam and its associated parts may be adjusted vertically, thereby to regulate the length of dip of the polish-rod.

A further object of the invention is to generally improve this class of devices, so as to increase their utility, durability, and efficiency.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of an oil-well jack constructed in accordance with my invention. Fig. 2 is a top plan view of the casing-head anchor detached. Fig. 3 is a longitudinal sectional view of the coupling-block. Fig. 4 is a transverse sectional view taken on the line 4-4 of Fig. 3 with the connecting-rods and coupling-pin detached. Fig. 5 is a detail perspective view of a modified form of coupling-block. Fig. 6 is a perspective view, partly in section, of the tail-block and its associated parts detached.

Similar characters of reference indicate corresponding parts in all of the figures of the drawings.

In the setting of an oil-pumping jack the success of the work is measured by the firmness of the frame and the proper adjustment

of the stroke, through which unnecessary friction is avoided and the desired length of dip is secured. These results are obtained in the preferred form of jack, (shown in Fig. 1 of the drawings,) in which C designates the ordinary casing head or well, S the stuffing-box, and P the polish-rod, these parts being of the usual or any preferred construction.

The jack comprises a rock-beam consisting of the angularly-disposed arms 1 and 2, each formed of parallel bars connected at their points of intersection to a tail-block 3, the latter being provided with a clamping-nut 4 to assist in retaining the rock-beam in position on said tail-block.

The outer ends of the parallel bars forming the arm 1 of the rock-beam are pivotally secured to a head-block 5, provided with a pair of depending links 6, the lower ends of which are operatively connected with a suitable gripping device 7, which engages the polish-rod, as shown. Secured to the lower end of the arm 2 is a coupling member or block 8, provided with a reinforcing longitudinally-disposed strengthening rib or flange 9, extending laterally from one face of the block and interposed between the parallel bars of the arm 2, as shown.

The longitudinal rib is formed with a plurality of openings 10, the central one of which is pierced by an attaching-bolt 11, which forms a pivotal connection between the block and the arm 2 of the rock-beam and also serves to pivotally support a pair of diagonal braces 12, the opposite ends of which are secured to the head-block 5.

Secured to the casing-head C is a clamping member, preferably formed in two sections 13 and 14, which embrace the casing-head, one of said sections being formed with laterally-extending lugs 14', which receive the threaded ends of the adjacent section and are provided with suitable clamping-nuts 15, by means of which said member is secured in position on the casing-head.

The member 14 is provided with spaced upstanding ears 16, pierced by a transverse pin 17, on which is pivotally mounted a yoke 19. Secured to the closed end of the yoke 19 is an anchoring-rod 20, the free end of which is provided with a suitable anchoring-plate 21, adapted to be embedded in the ground, while the opposite end of the rod is threaded for engagement with a pair of clamping-nuts 22, which bear one on each side of the yoke, and thus serve to lock the

rod in adjusted position. It will thus be seen that by adjusting the rod 20 the casing-head may be moved laterally to aline the same with the stuffing-box, and thus prevent undue friction between the parts when the jack is in operation.

Secured to the opposite ends of the pin 17 is a pair of spaced diagonal brace-bars 23, the opposite ends of which are pivotally connected to the tail-block 3 and also pivotally connected to a pair of rearwardly-extending legs or supports 24. Detachably secured to the legs or supports 24 is an adjustable U-shaped anchor 25, adapted to be buried or otherwise embedded in the ground, and provided with spaced arms 26, the free ends of which are clamped in engagement with the legs 24 by means of suitable clips 27. The supporting-legs 24 and arms 26 are provided with a plurality of spaced openings 28, adapted to receive bolts or other similar devices 29, which serve to assist in clamping the anchor in adjusted position.

By having the rear legs of the jack adjustable the rock-beam may be raised or lowered at the tail-block, thus thrusting backward or forward the tail-block, so that the polish-rod may be maintained in a perfect perpendicular position.

The coupling member or block 8 is provided with a plurality of spaced ribs 29, having transverse recesses 30 formed therein for the reception of a coupling pin or bolt 31, to which are attached the spaced arms of the draw-bar or operating-lever 32. The outer end of the bars forming the operating-lever are deflected laterally and united by a securing-bolt 33 and are provided with one or more perforations 34, which serve as a means of connection with a pitman-rod or other suitable means for imparting a rocking movement to said rock-beam.

Attention is called to the fact that the rear face of the block at the bolt-receiving openings 30 is inclined or beveled, as indicated at 35, so that the bolt or coupling-pin 31 bears against the front and rear of the block, the latter being preferably provided with marginal strengthening-flanges 36, disposed one on each side of the longitudinal reinforcing-rib, as shown.

By having the coupling-block formed in the manner described the bolts 11 and 31 may be adjusted vertically of the block, thereby to regulate the dip or stroke of the polish-rod, while at the same time permitting free tilting movement of the rock-beam when the rear legs are adjusted. The bolt 11 also forms a bearing or pivotal point upon which the lower end of the brace 12 swings when the jack is thrown back for pulling rods.

In Fig. 5 of the drawings there is illustrated a modified form of coupling-block in which one side of the block is formed with integral perforated ears or lugs 37, adapted to

receive the bolt 31, that portion of the block adjacent the perforated lugs being concaved to form seats 38 for the reception of the bolt when the latter is placed in position on the coupling-block.

From the foregoing description it will be seen that there is provided an extremely simple, inexpensive, and efficient device admirably adapted for the attainment of the ends in view.

Having thus described the invention, what is claimed is—

1. In a pumping-jack, a tail-block, a rock-beam associated with the tail-block, and an adjustable anchoring member operatively connected with the tail-block for tilting the rock-beam.

2. In a pumping-jack, a tail-block, a rock-beam associated therewith, an adjustable anchoring member connected with the tail-block, a coupling member carried by one end of the rock-beam, and a draw-bar one end of which is adjustable vertically of the coupling member.

3. In a pumping-jack, a tail-block, a rock-beam associated with the tail-block, an anchor-supporting member secured to said tail-block, and an anchor adjustably secured to the supporting member for tilting the rock-beam.

4. In a pumping-jack, a tail-block, a rock-beam associated therewith, an anchor-supporting member pivotally connected with the tail-block and provided with spaced perforations, a U-shaped anchoring member adjustably mounted on the supporting member and provided with perforations adapted to register with the perforations in the supporting member, bolts passing through said perforations, and clips embracing the supporting and anchoring members.

5. In a pumping-jack, a tail-block, an angularly-disposed rock-beam associated with the tail-block, a coupling secured to one of the arms of the rock-beam, a head-block secured to the opposite arm of the rock-beam, a brace connecting the head-block and coupling member, a draw-bar operatively connected with the coupling member, and means for adjusting the tail-block thereby to tilt the rock-beam.

6. In a pumping-jack, a tail-block, a rock-beam provided with angularly-disposed arms, a coupling member pivotally connected with the lower end of one of said arms, a head-block secured to the free end of the opposite arm, a diagonal brace secured to the tail-block and pivotally connected with the coupling member and adjacent arm of the rock-beam, and a draw-bar associated with the coupling member.

7. In a pumping-jack, a tail-block, a rock-beam associated with the tail-block and provided with angularly-disposed arms, an adjustable anchoring member pivotally con-

nected with the tail-block, a coupling member secured to one of the arms of the rock-beam, and a draw-bar adjusted vertically of the coupling member.

5 8. In a pumping-jack, a tail-block, a rock-beam associated with the tail-block and provided with angularly-disposed arms, a head-block secured to one of said arms, a coupling member secured to the opposite arm, braces
10 pivotally connected to the head-block and coupling member, respectively, a draw-bar mounted on and adjustable vertically of the coupling member, an anchoring member, and a brace extending between the anchoring
15 member and the tail-block.

9. In a pumping-jack, a tail-block, an angularly-disposed rock-beam associated with the tail-block, a head-block secured to one end of the rock-beam, a coupling-block secured to the opposite end of said rock-beam and provided with spaced ribs having transverse openings formed therein, a brace secured to the head-block and pivotally connected to the coupling-block and adjacent
20 end of the rock-beam, respectively, a bolt engaging the openings in the coupling-block, and a draw-bar pivotally mounted on the bolt.

10. In a pumping-jack the combination
30 with a casing-head, a sectional clamp engaging said head, an anchoring member associated with said clamp, a tail-block, a rock-beam associated with the tail-block, and a brace extending between the clamping member and tail-block, respectively.

11. In a pumping-jack the combination with a casing-head, of a sectional clamp embracing the casing-head and provided with upstanding ears, a yoke pivotally mounted
40 between said ears and provided with an anchoring member, a tail-block, a rock-beam associated with the tail-block, a brace extending between the ears of the clamping member and secured to the tail-block, a coupling member secured to one end of the rock-

beam, and a draw-bar secured to and adjustable vertically of the coupling member.

12. In a pumping-jack, the combination with a casing-head, of a clamp engaging the casing-head and provided with upstanding
50 lugs, a yoke pivotally mounted between said lugs, an adjustable anchoring-rod carried by the yoke, a tail-block, a rock-beam associated with a tail-block, a brace extending between the lugs of the clamping member
55 and said tail-block, an adjustable anchoring member pivotally secured to the tail-block, and a draw-bar mounted on and adjustable vertically of the rock-beam.

13. In a pumping-jack, a coupling member provided with a longitudinal reinforcing-bar and having a plurality of transverse bolt-receiving recesses formed in one face thereof.

14. In a pumping-jack, a coupling member comprising a block provided on one side
65 thereof with a longitudinal reinforcing-bar and having its opposite face formed with spaced ribs provided with transverse recesses for the reception of a coupling-bolt, the walls of the recesses at the rear of the block being
70 inclined or beveled.

15. In a pumping-jack, a coupling member comprising a block provided on one side thereof with a perforated longitudinal reinforcing-bar and spaced marginal flanges, and
75 having its opposite face formed with parallel ribs provided with spaced transverse recesses, the adjacent face of the block at said recesses being concaved to form bearing-seats for the reception of a bolt, and the rear face of the
80 block at said openings being inclined in opposite directions.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES WILLIAM RHOADES.

Witnesses:

J. V. JONES,
NOAH STAHL.