March 27, 1928. 1,664,364

W. G. JENSEN ET AL

PUMP JACK

Filed Sept. 20, 1926 3 Sheets-Sheet 1

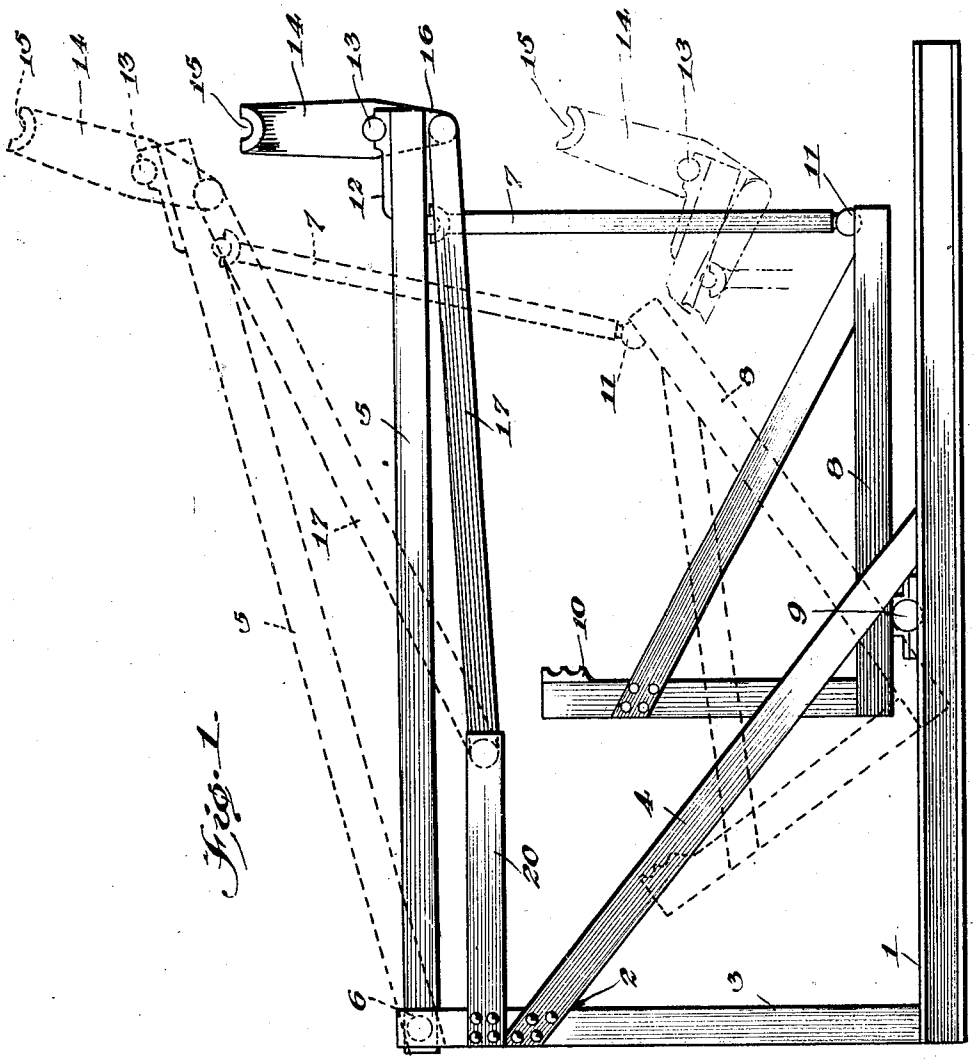


Fig. 1.

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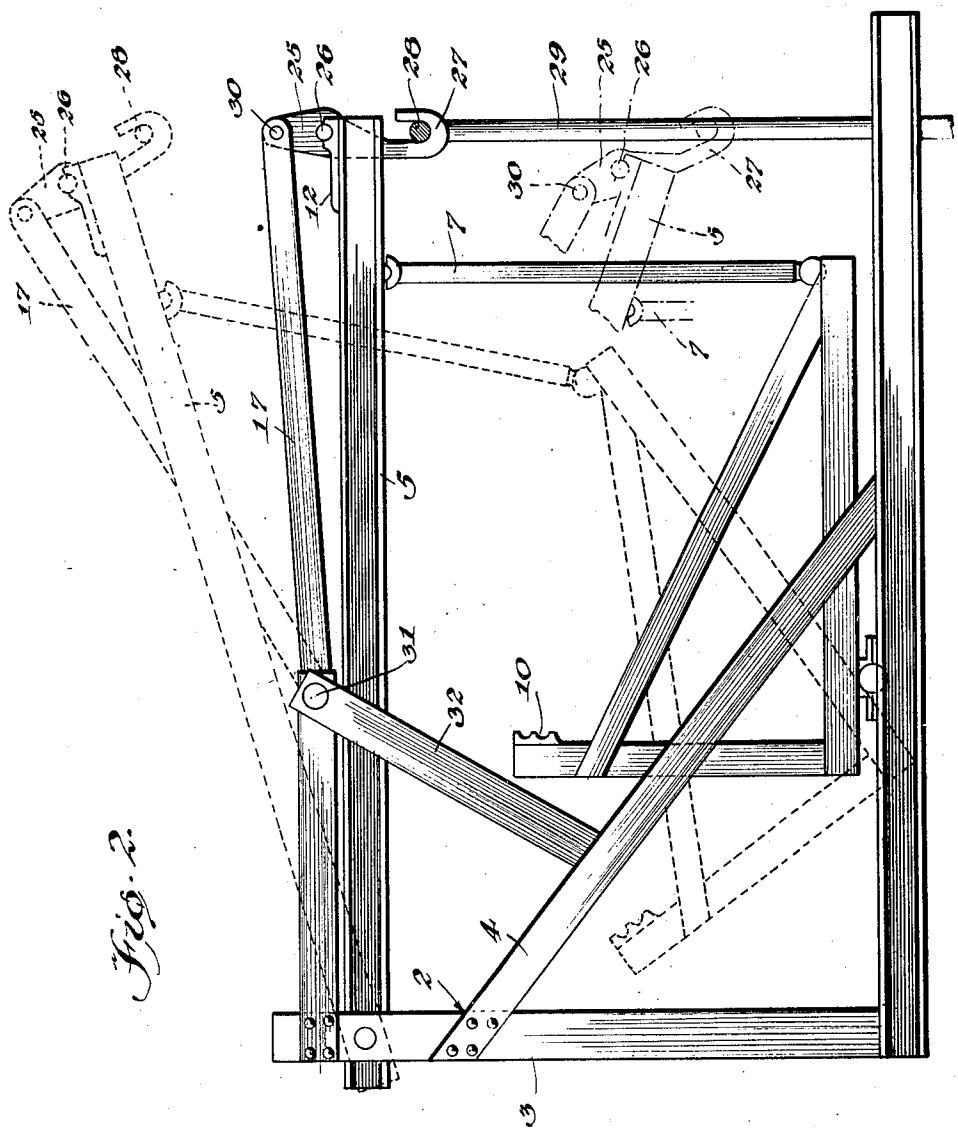


Fig. 2.

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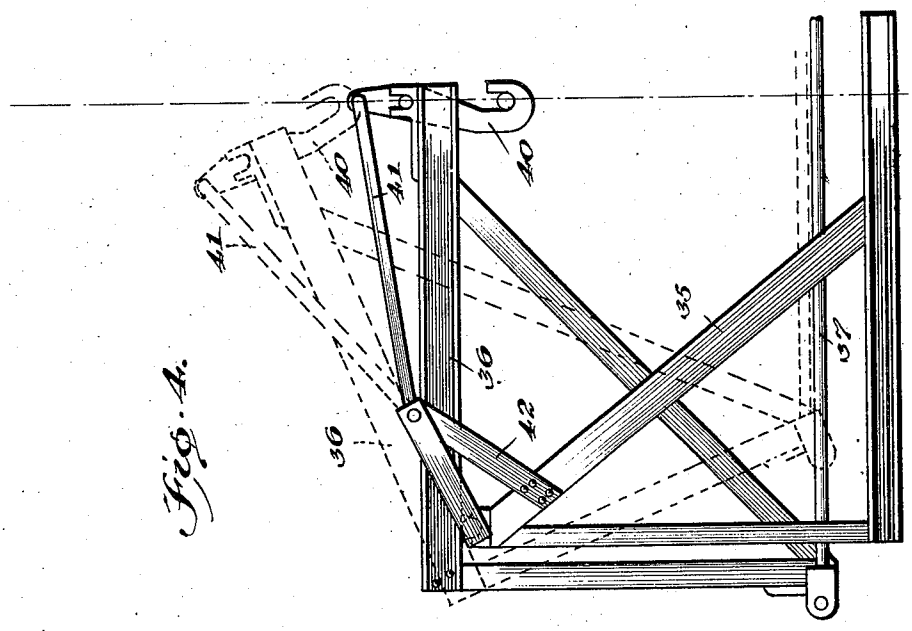


Fig. 4.

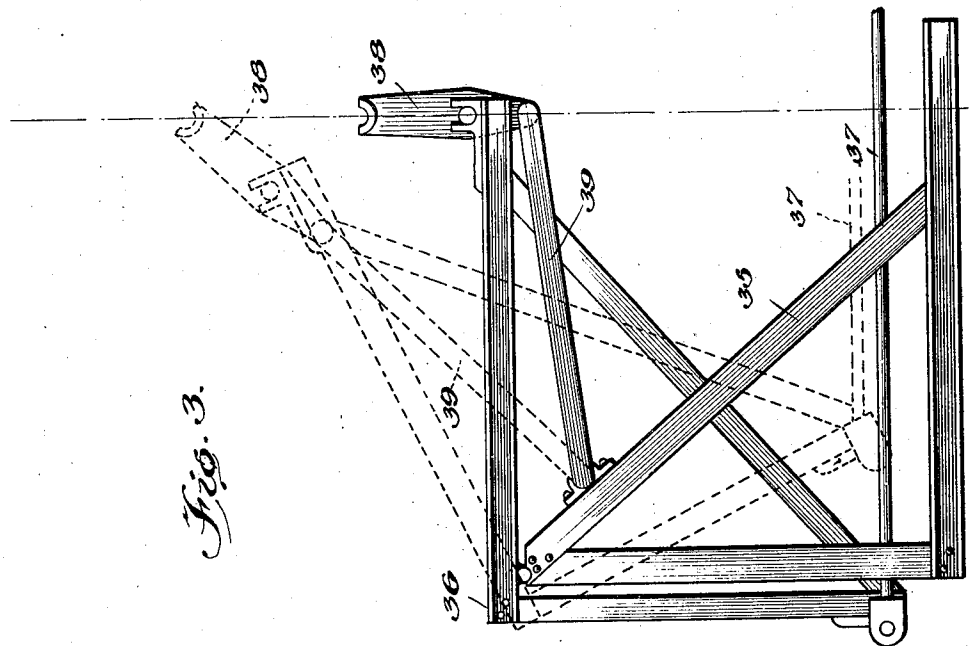


Fig. 3.

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Patented Mar. 27, 1928. 1,664,364

UNITED STATES PATENT OFFICE.

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PUMP JACK.

Application filed September 20, 1926. Serial No. 136,706.

This invention relates to an improvement in pump jacks and has for its object to provide a pump jack which is of simple and durable construction, reliable and effective in operation and easy and comparatively inexpensive to manufacture and which along with these advantages is so constructed and organized as to impart to the polish rod of the pump a true rectilinear movement.

A further object is to provide a pump jack having these capacities and features and which is also adapted for use with or embodiment in various types of jacks.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification, and in which:

Figure 1 is a view in side elevation showing one embodiment of the invention,

Figure 2 is a similar view of another embodiment,

Figure 3 is a view in side elevation of still another form of the invention, and

Figure 4 is a view in side elevation showing another application of the invention.

Referring to the drawings and more particularly to Figure 1, it will be seen that the pump jack comprises a suitable base 1 fixed in any desired way to a foundation. A stationary frame designated generally at 2 is mounted on the base 1 and consists of a post 3 having its lower end fastened to the base 1 and having a brace 4 secured to the post and to the base 1. A rocking beam 5 is provided and has one end rockably mounted, as at 6, on the upper end of the post 3. The post 3 may have its upper end bifurcated to receive the associated end of the beam 5 or the post 3 may be constituted of two members suitably fastened in spaced parallel relation. The forward end of the rocking beam 5 is pivotally connected with the upper end of the standard 7, the lower end of which is pivotally connected to a rocking frame 8 having the usual bearing 9 on the base 1. The rocking frame 8 is provided with a bearing plate 10 adapted for connection with the shackle rod line (not shown). On the outer bifurcated end of the rocking beam 5 a bearing member 12 is provided for receiving trunnions 13 which project laterally from a rockable bracket 14 having bearing sockets 15 to receive trunnions fastened to and projecting laterally from the polish rod. The rockable bracket 14 has a downwardly tapered lower end 16 which projects below the rocking beam 5 and which is pivotally connected to a controlling link 17, the controlling link 17 being pivotally mounted on a bracket 20 fixed to the post 3 of the stationary frame.

With this construction, when the rocking beam is oscillated back and forth about its pivot, the link 17 constrains the rockable bracket 14 to swing on the rocking beam 5 and the rocking motion of the bracket compensates for the rocking movement of the beam 3 so that the motion imparted to the polish rod is true rectilinear movement.

The form of the invention illustrated in Figure 2 is identical to that shown in Figure 1 and described with the exception that the frame 14 is omitted and in lieu thereof, a swinging hook 25 is provided, the hook 25 having trunnions 26 mounted on the bearing members 12 and also having a bill 27 engaging trunnions 28 on the polish rod 29. The upper end of the swinging hook is connected, as at 30, to the link 17. In this embodiment of the invention the link is arranged above the beam 5 and to one side thereof, and is pivotally connected, as at 31, to a bracket member 32 having a member fixed to the post 3 and brace 4 of the frame 2. In this mounting of the link the embodiment of the invention shown in Figure 2 also differs from the embodiment of the invention shown in Figure 1.

In the form of the invention shown in Figure 3 the pump jack has a stationary frame 35 on which a rocking frame 36 is mounted and is rocked by virtue of its connection to the shackle rod line 37. On the outer end of the frame a rockable bracket 38 similar to the rockable bracket 14 is mounted, and this rockable bracket 38 is controlled during the swinging of the frame 36 by means of the control link 39 pivotally connected to the rockable bracket 38 and to the frame 35.

The form of the invention shown in Figure 4 is identical to that shown in Figure 3 except that in lieu of the bracket 38, a swinging hook 40 identical with the swinging hook 25 is provided and this swinging hook 40 is controlled by means of a control link 41 pivotally mounted on a fixed bracket 42. In other words the embodiment of the

invention shown in Figure 4 is the same as in Figure 2 except that it is applied to a different form of jack, likewise the embodiment shown in Figure 3 is similar to that shown in Figure 1 except that it is mounted on a different type of jack.

We claim:

1. In a pumping jack, a substantially L shaped stationary frame, a diagonal cross brace for said frame, a strut vertical to the diagonal brace, said strut extending to a height substantially that of the top of the frame, a brace paralleling the bottom members of the frame and extending to and being securely fastened to the strut vertical to the diagonal brace, beams, the longer of which is pivoted to the top of the L and the other at the point where the strut and the bottom paralleling piece join, both of said pivoted beams being singly attached to a hooked link member engageable with the polish rod of a well, and a means for reciprocating said link in a vertical direction, said means comprising an L shaped rockable bracket mounted on the lower member of the main frame, said bracket having a link pivoted to the lower end of the bracket and to a point near the end of the longer beam carrying the hooked link.

2. In a pumping jack, an L frame, long and short parallel levers mounted on the top of said frame and parallel to the base, said levers being each pivoted to a hooked link engageable with the polish rod of a well, and a rockable right angled bracket and a link connecting the free end of the base member thereof with the longer of the two top levers.

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