

Oct. 25, 1938.

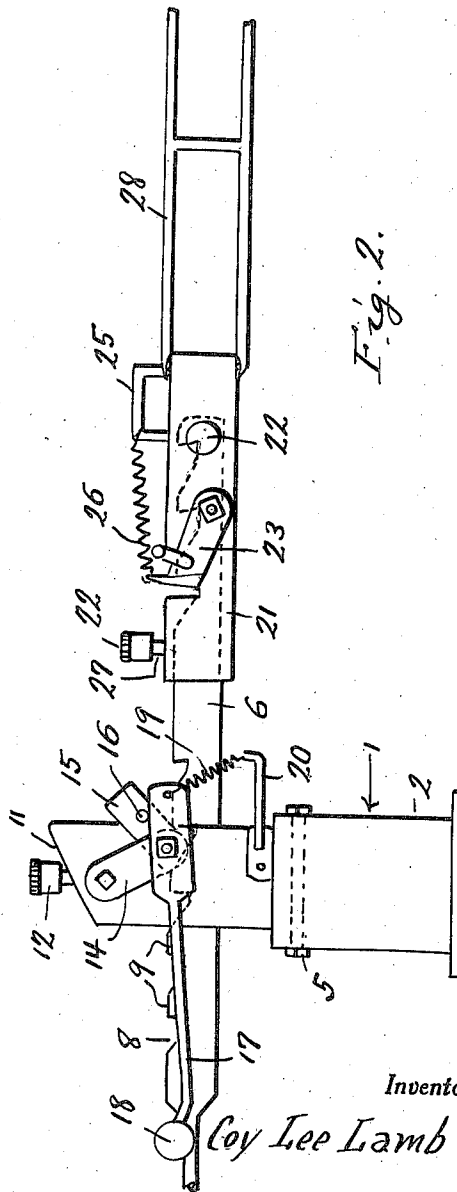
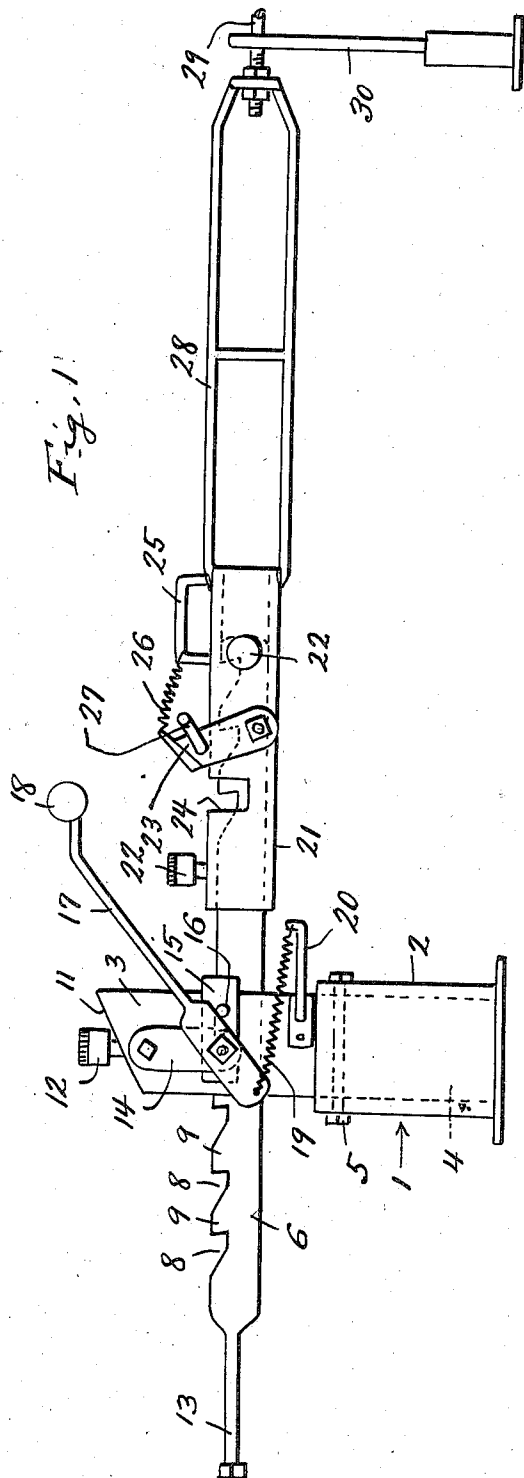
C. L. LAMB

2,134,615

SURFACE ROD LINE JACK

Filed May 9, 1938

2 Sheets-Sheet 1



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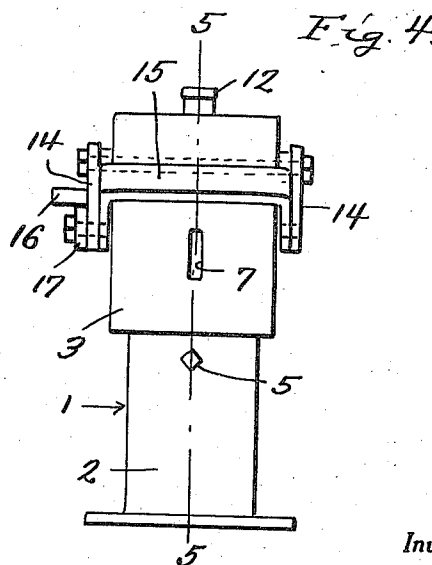
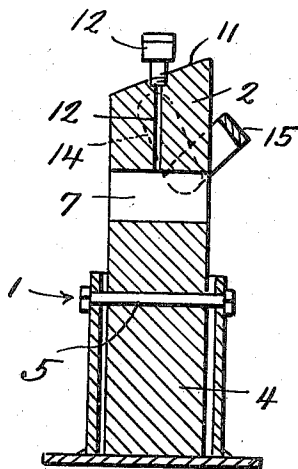
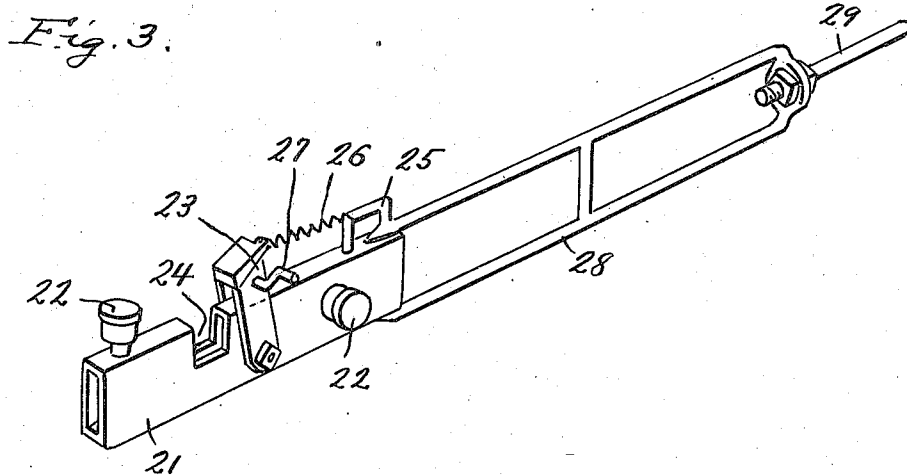
C. L. LAMB

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SURFACE ROD LINE JACK

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,134,615

SURFACE ROD LINE JACK

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Application May 9, 1938, Serial No. 206,961

1 Claim. (Cl. 74—593)

The present invention relates to new and useful improvements in power rod line jacks particularly for oil wells and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character embodying a novel construction, combination and arrangement of parts through the medium of which a well may be expeditiously hooked on and off without danger of injuring the operator, which frequently occurs at present.

Another very important object of the invention is to provide a surface rod line jack of the aforementioned character embodying means for taking up slack in the power line.

Other objects of the invention are to provide a surface rod line jack of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of an embodiment of the invention, showing the device hooked off.

Figure 2 is a side elevational view, showing the device hooked on.

Figure 3 is a perspective view of the slide and the parts carried thereby.

Figure 4 is an elevational view of the knock-off post and the elements mounted thereon.

Figure 5 is a vertical sectional view, taken substantially on the line 5—5 of Fig. 4.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a knock-off post which is designated generally by the reference numeral 1. The post 1 includes a metallic tube or pipe 2 having mounted thereon a block 3 of suitable material, preferably wood. The block 3 is provided with a depending portion 4 which, as illustrated to advantage in Fig. 5 of the drawings, is secured in the pipe 2 through the medium of a bolt 5.

The reference numeral 6 designates a ratchet bar which extends slidably through a horizontal opening 7 which is provided therefor in the block 3. The bar 6 is provided with a plurality of longitudinally spaced notches 8 in its upper edge providing teeth 9. A grease cup 10 is mounted

on the inclined top 11 of the block 3 for lubricating the ratchet bar 6 through a duct 12 in said block. The rod line (not shown) is adapted to be connected to the end 13 of the ratchet bar 6.

Metallic links 14 are pivotally mounted for swinging movement in a vertical plane on the sides of the block 3. Pivotally mounted on the links 14 and straddling the block 3 is a substantially U-shaped pawl 15 which is engageable with the teeth 9 for releasably locking the ratchet bar 6 against longitudinal movement toward the pump jack. Projecting from one side of the substantially U-shaped pawl 15 is a pin or lug 16. Pivotally mounted on the free end portion of the adjacent link 14 is a lever 17 having mounted on one end portion a weight 18. The other end portion of the lever 17 is engageable with the lug 16 for lifting the pawl 15 out of engagement with the ratchet bar 6. Connected to this end portion of the lever 17 is an assist spring 19 one end of which is connected to a suitable bracket 20 on the post 1.

Mounted for longitudinal movement on the ratchet bar 6 on the power side of the knock-off post 1 is a slide 21 of suitable metal. Grease cups 22 are provided on the slide 21. Pivotally mounted at an intermediate point on the slide 21 is a latch 23 which is engageable with the teeth 9 for securing said slide 21 against longitudinal movement on the ratchet bar 6. The latch 23 is engageable with the ratchet bar 6 through an opening 24 which is provided therefor in the slide 21. Mounted on one end portion of the slide 21 is a handle 25. A spring 26 has one end connected to the handle 25 and its other end connected to the latch 23 for disengaging said latch from the ratchet bar 6. A handle 27 is provided on the free end portion of the latch 23 for engaging said latch with the ratchet bar 6 against the tension of the spring 26. Also mounted on this end portion of the slide 21 and extending longitudinally therefrom is a suitable connector 28. The connector 28 may be fixed to the slide 21 in any suitable manner, as by welding. The reference numeral 29 designates the rod line to the power which is coupled to the connector 28. A guide and supporting post 30 is provided for the power line 29.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing, particularly to those skilled in the art to which the invention pertains. When it is desired to knock off a well, the lever 17 is simply swung to the position shown in Fig. 1 of the drawings. The weight 18 is heavy enough to

overcome the spring 19. With the lever 17 in this position the pawl 15 swings downwardly and engages one of the teeth 9 of the ratchet bar 6 for locking said ratchet bar against movement toward the well. Further, the weighted lever 17 rests on the lug 16 for retaining the pawl 15 in engagement with the ratchet bar 6. It may be well to here state that when the well is hooked on, the latch 23 is engaged with one of the teeth 9 of the ratchet bar 6 for connecting the slide 21 thereto, said latch being held in engagement in this manner against the tension of the spring 26 by the constant load on the jack. When the slide 21 moves forwardly, with the ratchet bar 6 locked against forward movement by the pawl 15, the latch 23 is relieved of the load and is immediately swung upwardly to disengaged or inoperative position, thus hooking off said slide 21. When it is desired to hook the well on again the lever 17 is swung to the position shown in Fig. 2 of the drawings. The spring 19 assists in doing this. When swung to this position, one end portion of the lever 17 engages beneath the lug 16 and raises the substantially U-shaped pawl 15 out of engagement with the ratchet bar 6. The latch 23 is then swung downwardly against the tension of the spring 26 through the medium of the handle 27 for engagement with one of the teeth 9 for again operatively connecting the slide 21 to the ratchet bar 6. Obviously, the adjustability of the members 6 and 21 relative to each other permits slack in the power line to be readily taken up.

It is believed that the many advantages of a surface rod line jack constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

A surface rod line jack comprising a knock-off post, said post including a vertical metallic pipe, a block mounted on the upper end of said pipe, said block having an opening extending horizontally therethrough, a ratchet bar extending slidably through the opening, links mounted for swinging movement in a vertical plane on the block, a substantially U-shaped pawl pivotally mounted on said links and engageable with the ratchet bar for releasably securing said ratchet bar against longitudinal movement in one direction, a lug projecting from said pawl, a lever pivotally mounted on one of the links and engageable with the lug for engaging the pawl with the ratchet bar or for disengaging said pawl from said ratchet bar, a weight on one end portion of the lever, a spring connected to the other end portion of the lever for assisting in swinging said lever in one direction, and means for releasably connecting the ratchet bar to a source of power.

COY LEE LAMB.