

L. JOHNSON.
PUMP ROD LIFTER.
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984,764.

Patented Feb. 21, 1911.

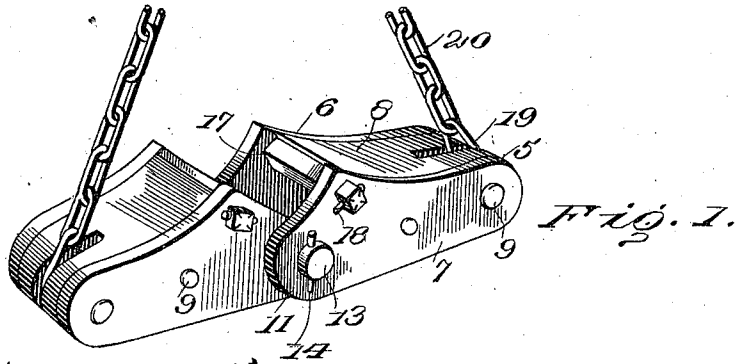


Fig. 1.

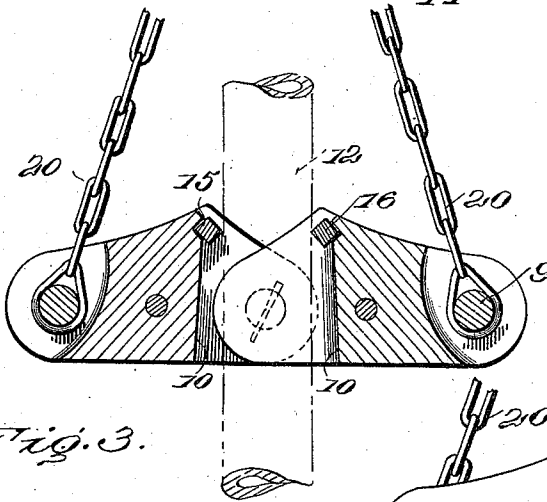


Fig. 2.

Fig. 3.

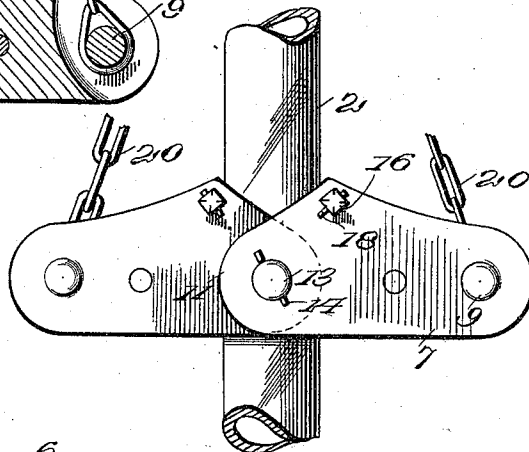


Fig. 4.

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PUMP-ROD LIFTER.

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To all whom it may concern:

Be it known that I, LEONARD JOHNSON, citizen of the United States, residing at Blue River, in the county of Grant and State of Wisconsin, have invented certain new and useful Improvements in Pump-Rod Lifters, of which the following is a specification.

This invention relates to pump rod lifters and has for its object the provision of a comparatively simple and thoroughly efficient device of this character by means of which pump rods or tubes may be readily lowered into or removed from a well.

A further object of the invention is to provide a pump rod lifter, the construction of which is such as to positively grip the rod or tube and thus prevent accidental slipping thereof during the raising or lowering operation.

A further object is to provide a pump rod lifter including pivotally united jaws having means for engagement with a hoisting device and provided with transverse bars having angular edges adapted to bite into the pipe or rod when said jaws are tilted.

A further object is to provide the transverse gripping bars with a plurality of cutting edges so that when one cutting edge becomes worn or dull the bar may be removed and reversed, thereby to present a new cutting edge to the work.

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

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a perspective view of a pump rod lifter constructed in accordance with my invention. Fig. 2 is a side elevation of a lifter showing the same in position on a pump rod or tube. Fig. 3 is a vertical sectional view of the same. Fig. 4 is a top plan view of the lifter detached from the pipe, the hoisting chain, trunnions and cotter pins being omitted for the sake of clearness.

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

The improved pump rod lifter forming the subject-matter of the present invention includes pivotally united jaws 5, each com-

prising spaced plates 6 and 7 between which are interposed filling blocks 8, said blocks being rigidly secured to the side-plates by bolts, rivets or similar fastening devices 9.

The inner ends of the side-plates are extended longitudinally beyond the inner flat faces 10 of the filling blocks to form ears 11 adapted to embrace the pump rod or tube indicated at 12. One of the side-plates of each jaw is provided with a laterally extending pin or trunnion 13 which enters a correspondingly shaped opening formed in the adjacent side-plate of the mating jaw, thus to form a pivotal connection between the jaws and to permit the latter to be moved into or out of engagement with the rod or tube 12. The side-plate 7 of one jaw bears against the outer face of the mating jaw, said jaws being held in assembled position by pins 14 extending through openings formed in the trunnions 13, as shown.

The inner flat face 10 of each filling block 8 is provided with an angularly disposed recess 15 in which is seated a transverse gripping bar 16 having a plurality of angular cutting edges 17 adapted to bite into the walls of the rod or tube 12 so as to positively grip the rod or tube and thus effectively prevent accidental slipping thereof during the raising and lowering operation.

The transverse gripping bars 16 are preferably tapered and extend through correspondingly shaped openings formed in the adjacent side-plates of the pivoted jaws, said bars being removable and retained in position on the jaws by pins 18. By forming the gripping bar 16 in this manner when one of the cutting edges 17 thereof becomes dull or worn by constant use, said bar may be readily removed and reversed so as to present a fresh cutting edge to the work, and thereby materially prolong the life of the lifter.

The opposite ends of the filling blocks 8 are provided with longitudinal slots 19, through each of which extends one of the fastening devices 9. Extending within the slots 19 and secured in any suitable manner to the adjacent bolts or fastening devices 9 is a chain, cable or other flexible element 20, the upper end of which is attached to a hoisting device of any suitable construction (not shown), for the purpose of raising or lowering the rod or tube 12.

The transverse gripping bars 16 are preferably disposed at the upper edges of the side-plates of the pivoted jaws on one side of the pivotal axis thereof so that when the outer or free ends of the jaws are moved upwardly the cutting edges of said bars will be forced into engagement with the rod or tube 12 and when the outer or free ends of the jaws are lowered the transverse bars will be moved out of engagement with the pump rod so as to allow the lifter to slide longitudinally on the pump rod.

In operation the lifter is positioned over the end of the tube or rod 12 with the rod disposed between the flat faces 10 of the filling blocks, after which the hoisting device is actuated to exert an upward pull on the lifter which causes the transverse bars 16 to bite into the tube or rod and thus effectively hold the same during the elevating operation. In order to detach the lifter from the pump rod or tube it is merely necessary to allow a slight slack in the chain 20 when the outer ends of the jaws will drop by gravity and thus permit the removal of the pump rod or tube, as will be readily understood.

It will, of course, be understood that the pump rod lifters may be made in different sizes and shapes, and that as many of said lifters may be employed for raising and lowering a pump rod as may be found desirable or necessary, without departing from the spirit of the invention.

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

1. A pump rod lifter including pivotally united jaws having overlapping ears and each provided at its pivoted end with a face having a seating recess formed therein, and gripping bars of angular cross-sectional formation seated in said recesses.

2. A pump rod lifter including pivotally united jaws having their inner ends provided with overlapping ears, and transverse

gripping bars of angular cross-sectional formation detachably secured to the jaws and piercing said ears.

3. A pump rod lifter including co-acting jaws, each formed of mating plates, filling members interposed between the plates of each jaw and having their inner ends provided with seating recesses, transverse gripping bars seated in said recesses, and means connected with the outer ends of the filling members for attachment to a hoisting device.

4. A pump rod lifter including co-acting jaws, each provided with longitudinally disposed ears, one ear of each jaw being provided with a laterally extending pin adapted to enter a correspondingly shaped opening in the ear of the mating jaw, removable transverse gripping bars secured to the jaws and piercing said ears, and means secured to the outer ends of the jaws for attachment to a hoisting device.

5. A pump rod lifter including pivotally united jaws, each formed of spaced plates, filling blocks interposed between the plates and having their inner faces spaced from the pivoted ends of the jaws to form ears, and their outer ends provided with longitudinal slots, there being seating recesses formed in the inner faces of the filling blocks, fastening devices piercing the said plates and filling blocks, one of the fastening devices of each jaw piercing the adjacent longitudinal slot, transverse gripping bars seated in the recesses and provided with a plurality of cutting edges, and a flexible suspension element having its lower end extending within the slots and anchored on the adjacent fastening devices.

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

LEONARD JOHNSON. [L. s.]

Witnesses:

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