(No Model.)

A. McNALLY.

LIFTING JACK.

No. 306,505. Patented Oct. 14, 1884.

Fig 1

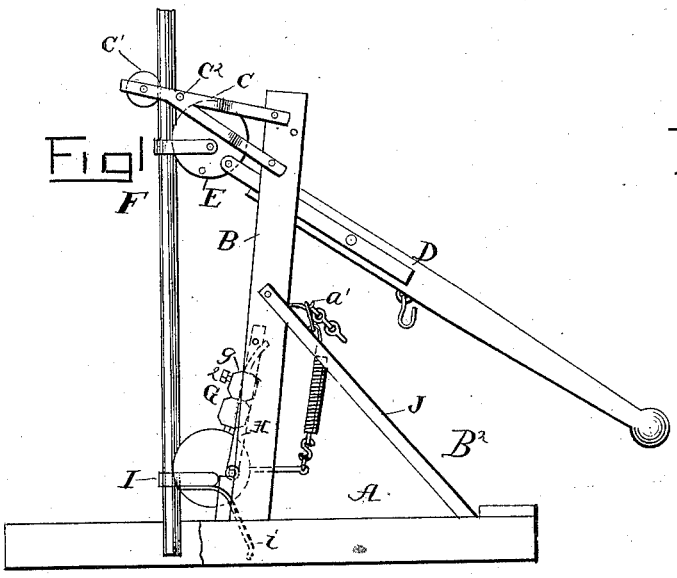


Fig 2

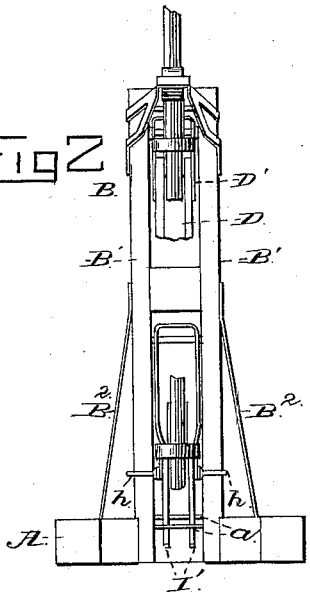
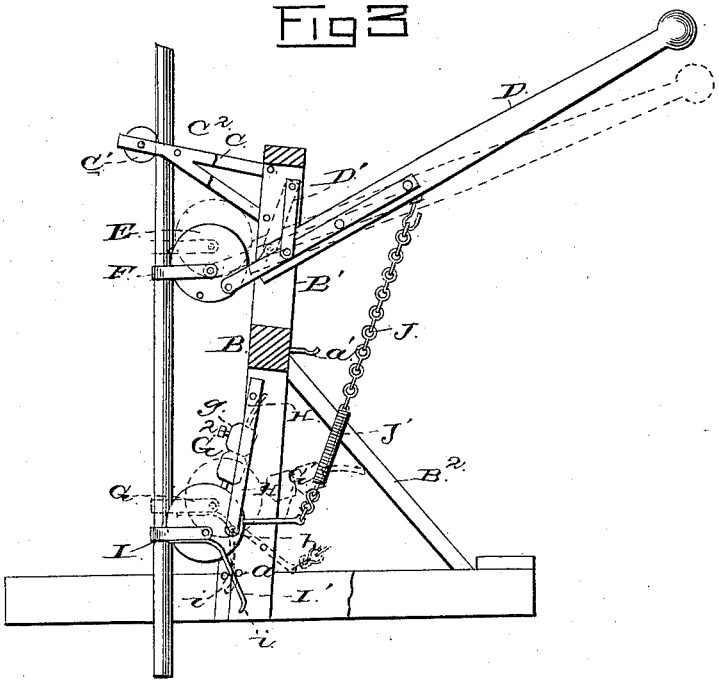


Fig 3



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UNITED STATES PATENT OFFICE.

AUSTIN McNALLY, OF CASCADE, IOWA.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 306,505, dated October 14, 1884.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN McNALLY, a citizen of the United States, residing at Cascade, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Lifting-Jacks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to lifting-jacks intended for raising and lowering long rods, tubing, &c.

It consists in certain novel constructions and combinations, as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a front view; Fig. 3, a vertical longitudinal section of my machine.

In practice I prefer to use a base, A, whereon to mount the standard B. This standard may be a single post or beam; but it is preferably formed of two bars, B′ B′, and braced by struts B^2 B^2. A bracket, C, is extended forward from the upper end of the standard, and has a roller, C′, supported in its outer end, in rear of which the arms of the bracket are connected by a cross-pin, C^2, arranged a sufficient distance from the pulley to provide a guide-passage for the pipe. The lever D is pivoted near its forward end in a support, D′, which is pivoted at its upper end to the standard, so the said lever may be moved longitudinally as well as turned on its pivot. A pulley, E, is pivoted eccentrically to the forward end of the lever, and is provided with a loop, F, the arms of which are also pivoted eccentrically to the pulley and on the same side of the center of same as the connection with the lever. This loop is adapted to embrace the pipe or rod, which is passed between the loop and the pulley. When in the position shown in Figs. 1 and 2, if the outer end of the lever be depressed, the rod will be firmly grasped between the pulley and the loop and be raised; but when the lever is elevated on its return-stroke the pulley will release the rod and slide down thereon for a fresh hold, the said rod being held meanwhile by a suitable detent, as will be presently described.

The described operation is the one followed in raising pipes, and for such purpose the lever might be pivoted directly to the standard; but the swinging support D′ is preferred, and becomes useful in lowering pipes or rods. In so doing the detent is released while the lever is lowering the pipe, and caused to hold the pipe while the lever is returning for a fresh hold. In Fig. 3, suppose the lever has been brought to the position shown, in lowering the pipe the detent is now caused to grasp the pipe and the lever is returned for a fresh hold. To release the lever, the same is swung slightly forward, as indicated in dotted lines. This turns the pulley on its pivot and brings the shorter diameter of same between the pivot and cross-bar of the loop. This longitudinal motion of the lever is accomplished by means of its swinging support. The lever may now be raised for a new hold to about a horizontal position, when, by a longitudinal movement of the lever to the rear, it may again be caused to bind the pipe, when, the detent being properly released, the pipe or rod may be again lowered as far as the length of the lever will permit, when the operation may be repeated. I prefer to use the form of detent shown, and which I will now describe, because it is simple and cheap of construction, effective in use, and automatical in its operation. This detent consists of a pulley pivoted near its periphery in a swinging support, H, which is pivotally secured near its upper end to the standard. The pulley has a radial arm, G′, projected outward from it near its point of pivotal support, and a radial arm, G^2, projected from what might be called its "upper side," and provided with weights *g*. The object of this rod G^2 is to hold the pulley in the position shown in dotted lines, Fig. 3, except when engaged with the rod or being moved into such engagement in the operation presently described. The pulley is provided with a loop, I, similar to loop F, as will be understood. A rod or rods, I′, are secured to this loop and extend down between rods *a a*, as shown in Figs. 2 and 3, and have their ends bent at *i*. The object of these rods is to prevent the detent from being moved too far forward, and to hold the loop I at all times in a

horizontal position. Rods *h*, projected from the lower end of the support H, extend in front of the standard and hold the detent from moving in too far alongside the standard. A chain, J, is secured to the arm G′, and has one or more of its links elongated and covered by a spring, J′, inserted in it.

When the jack is being used for elevating pipe or rods, the chain is caught by one of its links in hook *a*′ on the standard, and the detent is held in the position shown, tightly binding the pipe or rod. The chain is held taut, and the spring permits a sufficient motion of the pulley to enable same to release the rod as the latter is drawn upward.

To lower pipes or tubes the operation of the lever has been before described. The chain in this use is secured at its end to the lever, as shown in Fig. 3. In lowering the rod the detent mechanism is, as indicated in dotted lines Fig. 3, being forced to and held in such position by the weighted arm G^2. When the rod has been lowered in the manner before described, the elevation of the outer end of the lever, when it reaches the position shown in Fig. 3, draws the chain taut, and the detent mechanism, by means of the chain andthe arm G′, into the full-line position shown in Fig. 3, to properly retain the same while the lever is being returned for a fresh hold.

It will be understood that my invention will be of great utility in the raising and lowering of the pipes of oil-wells, Artesian wells, and other cases where it is desired to raise or lower long pipes or rods which it is difficult to properly and conveniently manipulate by hand.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the standard, the lever pivotally supported thereon, the pulley pivoted eccentrically to the end of said lever, and the loop pivoted eccentrically to the pulley, substantially as set forth..

2. The combination, with the standard and the swinging support, pivoted at its upper end to the standard, of the lever pivoted to the lower end of the swinging support, and the pulley and loop, substantially as set forth.

3. In a lifting-jack, the combination of the standard, a bracket projected from the upper end thereof and provided with a guide-passage for the rod or pipe, the lever, the pulley pivoted eccentrically to the lever, and the loop eccentrically secured to the pulley, substantially as set forth.

4. The combination of the standard, the lever, grasping devices thereon, support H, pulley G, having weighted arm G^2, loop I, and the chain connected at one end with the pulley G, and having its other end adjustable into connection with the standard or the lever, substantially as set forth.

5. The combination of the standard provided with rods *a a*, the lever and grasping devices thereon, the pulley G, the swinging support therefor, the loop I, and the rods I′. secured to the loop I and extended downward between the rods *a a*, substantially as set forth.

6. The combination, with the standard, the lever, and the pulley G, provided with loop I and weighted arm G^2, of the chain or cord J, provided with spring J′, substantially as set forth.

7. The herein-described lifting-jack, consisting of the standard, the lever, the pulley E, loop F, bracket C, having pulley C′ and rod C^2, the support H, pulley G, loop I, weighted arm G^2, and chain J, substantially as set forth.

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

AUSTIN McNALLY.

Witnesses:
JOHN H. KLINKNER,
JAMES MOORE.