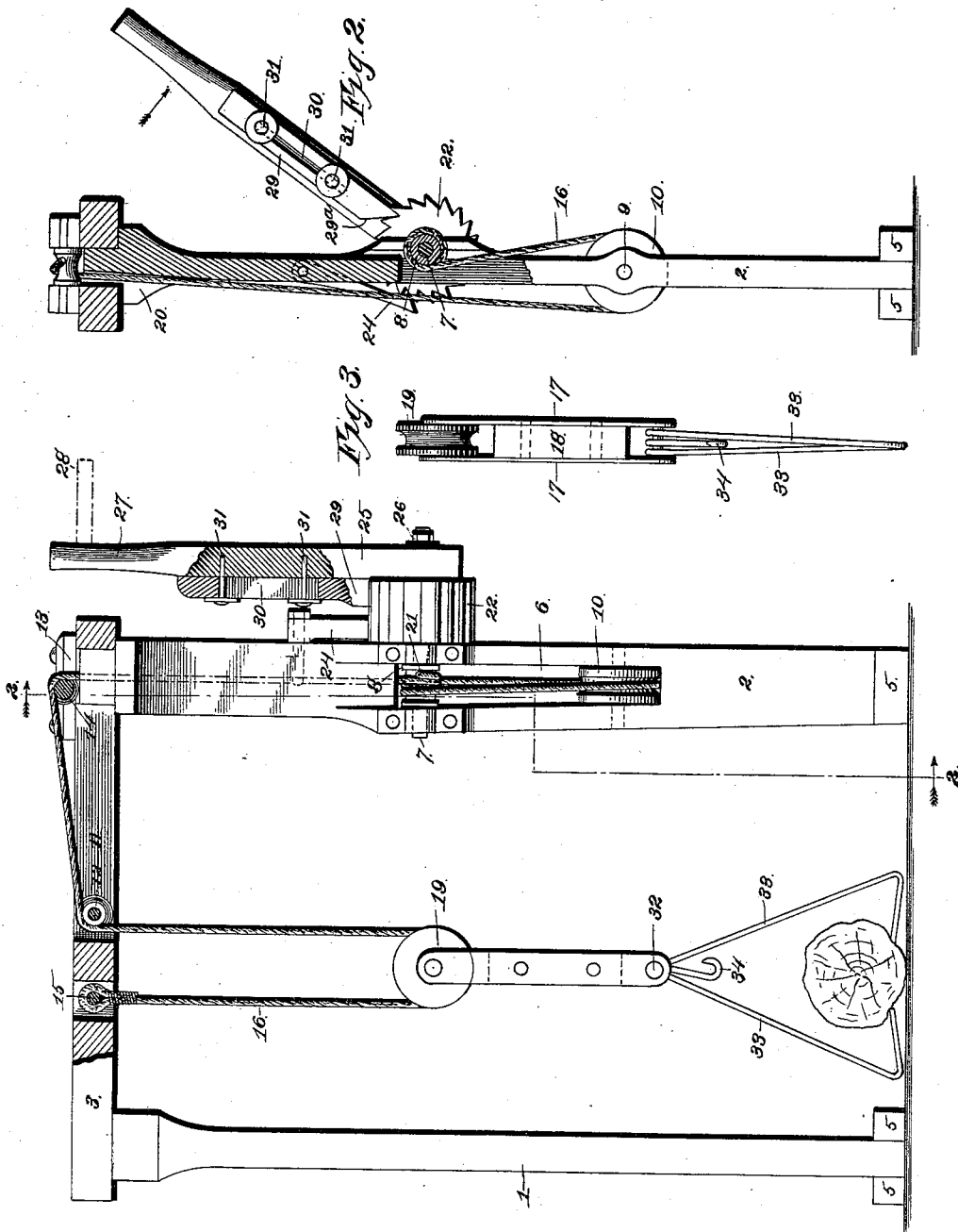


(No Model.)

J. C. FORAKER.
LIFTING JACK.

No. 541,043.

Patented June 11, 1895.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN C. FORAKER, OF BAXTER SPRINGS, KANSAS.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 541,043, dated June 11, 1895.

Application filed July 30, 1894. Serial No. 519,039. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FORAKER, of Baxter Springs, Cherokee county, Kansas, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to lifting jacks, adapted particularly for heavy weights, and the object of the invention is to produce a lifting jack which is easily operated, and which is simple, strong, durable, and inexpensive of construction.

With this object in view the invention consists in certain peculiar and novel features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it, with reference to the accompanying drawings, in which—

Figure 1 is a view partly in side elevation and partly in section. Fig. 2 is a vertical sectional view taken on the line 2 2 of Fig. 1, and Fig. 3 is an edge view of the lifting-tackle.

In the said drawings, 1 and 2 designate standards, which are connected at their upper ends by the cross-beam 3. These standards, if placed on damp or soft ground, will preferably be provided with blocks 5, 5, so as to provide an extended foot portion or base to prevent them sinking in the ground. When the device is placed upon hard ground, these foot-portions are not necessary and may be removed. The standard 2, about midway its length, is provided with the vertical slot 6, and journaled horizontally in bearings carried by said standards, adjacent to or at the upper end of said slot, is a shaft 7, upon which is mounted rigidly the winding-drum 8. Journaled also in said standard, and extending transversely of the slot 6, near its lower end, is the shaft 9, and mounted rigidly upon said shaft, is the grooved pulley 10.

The cross-beam 3 is provided with a slot 11, extending vertically therethrough, and mounted rotatably in said slot is the grooved pulley 12. Mounted upon said cross-beam and at the end of said beam above the standard 2, and upon opposite sides of the slot 11, are the

bearing-boxes 13, and journaled rotatably in said bearing-boxes and transversely of said slot, is the grooved pulley 14. A bolt 15 extends transversely of an opening formed in the cross-beam, and secured rigidly upon said bolt by splicing or in any other suitable manner, is the upper end of a rope or cable 16. A lifting block comprises the vertical and parallel plates 17, and interposed between and secured to said plates, is the block 18. A grooved pulley 19 is mounted rotatably between the upper ends of said plates 17, and this lifting block is placed operatively relative to the rope or cable by passing the free end of said rope or cable around the pulley 19, then vertically upward and forward and over the grooved pulleys 12 and 14, respectively. The cable is then drawn downwardly through the groove or opening 20, formed vertically in the upper end of the standard 2, and is brought around the grooved pulley 10, thence extends upwardly and around the winding-drum 8, to which it is permanently and firmly secured at its end, as shown at 21.

Mounted rigidly upon the shaft 7, at the outer side of the standard 2, is a ratchet-wheel 22, and mounted pivotally upon the bolt or pin 23 carried by said standard and above said ratchet-wheel, is a gravity-dog 24, which engages the ratchet-wheel 22, and is adapted to yield and allow said ratchet-wheel to rotate in one direction, and to prevent the rotation of the same in the opposite direction. A lever 25 is loosely or rotatably mounted upon the shaft 7, at the outer side of the ratchet-wheel 22, and is held from accidental displacement by the washer and retaining nut 26. This lever is preferably formed with a handle portion 27, or may be provided with an outwardly projecting handle 28, so as to constitute a crank.

A pawl 29 is provided with a longitudinal slot 30, and said slot sliding engages the pins or bolts 31, projecting inwardly from the lever 25, and is of sufficient length to allow the pawl to be moved into or out of engagement with the teeth of the ratchet-wheel, and to accomplish the automatic disengagement of said pawl from the ratchet-wheel, it is provided with a beveled lower end 29*, which coming in contact with the beveled or inclined por-

tion of the teeth of the ratchet as the lever is moved rearwardly, rides up over the same, as will be understood.

5 The plates 17 of the lifting-block are connected at their lower ends by a bolt or pin 32, and pivotally carried by said bolt are oppositely disposed grab-hooks 33, and the short ordinary hook 34.

10 In lifting a log or other heavy object, the lifting-block is lowered until the grab-hooks 33 can be engaged upon opposite sides of the log or other object, as shown clearly in Fig. 1. The lever is now grasped and rotated in the direction indicated by the arrow, Fig. 2, and
15 by reason of the engaging pawl 29 and the ratchet-wheel 22, the shaft 7 is rotated, and this rotation of the shaft winds the rope or cable upon the drum 8, and raises or elevates the log or other object from the ground. As
20 the lever is thrown back to its original position, the beveled surface 29^a of the pawl, engaging the successively presented teeth of the ratchet-wheel, causes said pawl to slide upward upon the guide-bolts 31, to allow this
25 backward movement of the lever to take place, and while this operation is in progress the gravity-dog 24, engaging the ratchet-wheel at its opposite side, prevents its back rotation and the consequent lowering of the log or
30 other object. The operation of the lever as described is repeated until the log or other object is raised to the required height. If necessary to deposit the log or other object in a plane slightly lower than the one to which
35 it has been raised, the dog 24 is disengaged from the ratchet-wheel, and the lever is grasped to lower the log or other object slowly.

It will be apparent from the foregoing that heavy objects may be handled with this jack
40 easily and expeditiously, because it takes only half the power to raise the weight by the arrangement of the pulleys and the doubling of the rope or cable at its point of connection with the grooved pulley 19, that would be re-
45 quired to raise the weight by a direct pull. It will also be apparent by this arrangement that as the weight is equally distributed between two portions of the rope or cable, it is necessary to use a rope or cable of only half
50 the diameter that would be required in rais-

ing the weight where it would be applied directly upon one portion of the cable.

When objects to be elevated are of such form that they cannot be conveniently engaged by the grab-hooks, the ordinary hook 55 34 may be employed in lieu thereof.

From the above description it will be apparent that I have produced a lifting jack which will be of great service in elevating heavy logs, baling-presses, and other heavy 60 bodies, and also lighter objects if desired, and which is simple, strong, durable, and inexpensive of construction and easily operated.

Having thus described my invention, what I claim as new, and desire to secure by Letters 65 Patent, is—

1. In a lifting-jack, the combination with a suitable framework, a rope, and a shaft having a drum upon which the lifting rope is wound or unwound, and a ratchet-wheel, of a 70 lever, provided with headed guide-pins, and a sliding gravity-pawl having a beveled lower end and provided with a slot engaging said guide-pins, substantially as described.

2. In a lifting-jack, the combination with a 75 pair of vertical standards, one of them slotted, a cross-beam connecting the upper ends of the same and provided with a longitudinal slot and a pin, guide-pulleys journaled upon said beam and in the vertical plane of its slot, 80 a guide-pulley journaled in the lower end of the slot of the standard, a winding drum located in the upper end of the said slot, a cable secured at its opposite ends to said winding drum and said pin, and guided around said 85 guide-pulleys and through said slots, and a lifting-tackle comprising a body-portion, pendent hooks, and a grooved pulley mounted upon the said cable, with a ratchet-wheel mounted upon the shaft of the winding-drum, 90 a lever, a pawl carried by said lever, and a dog supported from the frame-work, substantially as set forth.

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

JOHN C. FORAKER.

Witnesses:

M. R. REMLEY,
G. Y. THORPE.