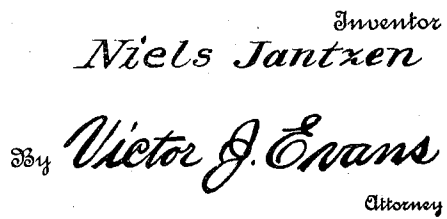
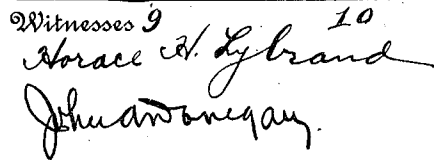


APPLICATION FILED NOV. 22, 1910.

Patented June 11, 1912.

2 SHEETS—SHEET 1.



N. JANTZEN.

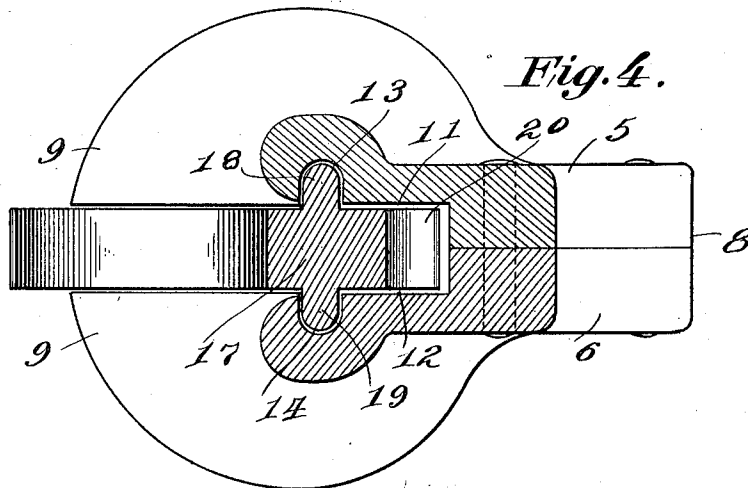
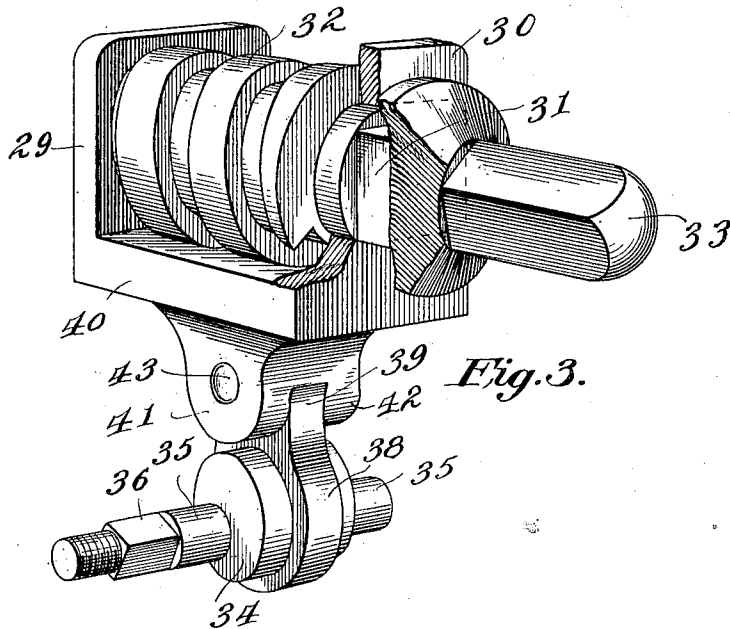
LIFTING JACK.

APPLICATION FILED NOV. 22, 1910.

1,029,447.

Patented June 11, 1912.

2 SHEETS—SHEET 2.



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LIFTING-JACK.

1,029,447.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed November 22, 1910. Serial No. 593,734.

To all whom it may concern:

Be it known that I, NIELS JANTZEN, a citizen of the United States of America, residing at Victoria, in the Province of British Columbia and Dominion of Canada, have invented new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to improvements in gearing and has particular application to gearing for lifting jacks, although it is to be understood that the useful application of my invention is not limited to this particular purpose.

In carrying out the invention, it is my purpose to provide a train of gearing which shall embody among other features a secondary mover for actuating the lifting bar, and a prime mover for actuating the secondary mover and supported in eccentric bearings whereby the prime mover may be moved into and out of engagement with the secondary mover.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming part of the specification;—Figure 1 is a side elevation of the device partly in section and disclosing the actuating mechanism for the lifting arm. Fig. 2 is a sectional end view approximately on the line 2—2 of Fig. 1 and looking in the direction of the arrow. Fig. 3 is a detail perspective of the prime mover. Fig. 4 is a sectional plan view on the line 4—4 of Fig. 1.

Similar numerals of reference are employed to designate corresponding parts throughout.

The jack standard or support comprises a pair of side sections designated by the numerals 5 and 6. These members may be of any suitable length and are suitably con-

nected by bolts or the like as indicated at 7. The side sections 5 and 6 at one end are extended laterally as shown at 8 and 9, the medial portion of the end of each side member being provided with an arcuate-shaped recess 10. The laterally extending portion 9 curves downwardly and upwardly to provide a toe, while the laterally extending portion 8 of each side member extends laterally and downwardly to provide a heel, the lower surface of which is in a plane with the lowest point in the curvature of the toe, this construction permitting the device for jacking logs in lumber camps, since the recessed portion 10 may be placed over a relatively thin log lying upon the ground and the toe and heel portion thereof embed themselves into the ground during the jacking operation, thus preventing slipping.

The side members 5 and 6 are upon their opposed inner surfaces provided with longitudinal recesses 11 and 12 opening through the opposite ends and one side of the side members, the said side members 5 and 6 being further provided adjacent to the opposite sides of the recess with longitudinal grooves 13 and 14. The side members 5 and 6 are provided between their medial portions and upper ends on the sides opposite to the sides through which the grooves 13 and 14 open with lateral extensions 15, the inner surfaces of which are recessed for the major portions of their length, the upper ends of the said recesses communicating with the upper end portions of the recesses 11 and 12. The upper ends of the lateral extensions 15 are extended outwardly and obliquely and transverse the recess to provide a handle grip 16. A lifting bar or other power distributing member is shown to comprise a shank portion 17 somewhat greater in length than the length of the side members of the jack standard and considerably greater in width than the widths of the recesses 11 and 12. The lifting bar or power distributing member slides in the recesses of the side members, and adjacent to its inner side is provided with lateral ribs 18 and 19 which are loosely received by the grooves 13 and 14. With this construction it will be manifest that lateral outward movement of the lifting bar will be positively prevented. The

inner side of the lifting bar is provided with a plurality of rack teeth 20, the function of which will appear later.

Journalled in the opposite sides of the
 5 lateral extensions 15 and adjacent to the upper ends thereof is a secondary mover or power receiving gear including a shaft 21 and fixedly secured to this shaft 21, adjacent each end thereof are spur gears 22.
 10 A portion of each of the spur gears 22 lies between the lifting bar and one side of the recesses 11 and 12, said recesses being increased in depth at this point to receive a portion of each of the gears 22. The spur
 15 gears 22 are provided with a plurality of laterally extending pins 23, which serve to interconnect the said spur gears so that the same may straddle the lifting bar, the said pins engaging the teeth 20 of the lifting
 20 bar during the rotation of the gears. Journalled in the sides of the lateral extensions 15, and at a point downwardly and outwardly from the shaft 21 is the power transmitting member comprising a shaft 24.
 25 Fixedly secured and adjacent to each end portion of the shaft 24 are spur pinions 25, the teeth of which mesh with the teeth of the spur gears 22. Fixedly secured to the shaft 24, intermediate the pinions 25 and
 30 of a greater diameter than the said pinions, is a worm wheel 26.

Formed in the outer sides of the lateral extensions 15 and at a point below the shaft 24 is an oblong opening 27. A yoke member or gear holder, the opposite terminals of which are designated by the numerals 29 and 30 is positioned between the inner faces of the lateral extensions 15 and free to slide therein. Journalled in the medial portions
 40 of the limbs 29 and 30 of the yoke is a driving gear or primary mover including a shaft 31, the portion of said shaft between said limbs being provided with a worm thread 32 to engage with the teeth of the worm
 45 wheel 26. The shaft 31 extends at one end portion through the oblong opening 27 and terminates in a non-cylindrical boss 33, that portion of the shaft extending through the opening corresponding in diameter ap-
 50 proximately to the width of the opening, the said diameter being considerably less than the length of the said opening so that the shaft may slide therein. Formed in the lower end portion of the lateral extensions
 55 15 are transverse openings which receive a suitable circular block 34. The block 34 is mounted eccentrically upon a shaft 35 journaled in the opposite faces of the jack stand-
 60 ard and having one end extending beyond one of such faces and equipped with a non-circular boss 36. Encircling the block 34 is a circular strap 38 provided upon its periphery with a radially extending apertured
 65 29 and 30 of the yoke tapers downwardly

and is bifurcated in the direction of its length so as to provide ears 41 and 42, the space between these ears receiving the portion 39 of the rod 38, the said ears having openings to aline with the openings of the portion 39, these alining openings receiving a pivot pin 43.

With this construction it will be manifest when a suitable tool is applied to the non-cylindrical boss 36 of the shaft 35 a turning movement is imparted to the shaft with the yoke and the parts connected thereto will be moved either into or out of engagement with the worm wheel 26.

In the operation of the device the shaft 35 is turned until at the upper portion of the opening and when so positioned the worm thread 32 will engage with the worm wheel 26. When a suitable crank handle or the like is applied to the non-cylindrical portion 33 of the worm shaft and the latter turned in one direction rotary movement will be imparted to the spur wheel 22, whereupon the pins 23 will engage the teeth 20 and move the lifting bar upwardly. When for any reason it is desired to release the lifting bar or power distributing member without the necessity of turning the worm shaft in the opposite direction the shaft 35 is turned in the manner before described until the worm shaft moves from engagement with the worm wheel 26, whereupon the weight on the lifting bar or the weight of the latter itself will be sufficient to rotate the spur gear 22 and pinion 25.

From the foregoing, it is evident that I have provided a device which is comparatively simple in structure and inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

1. The combination of a driving gear, a power transmitting member driven by the driving gear, a gear receiving motion from said transmitting member, a support, a yoke holding said driving gear and movable in the support, a shaft journaled in the support, a block mounted eccentrically on the shaft, and a connection between said block and yoke whereby in the movement of the shaft the driving gear may be moved into and out of engagement with the power transmitting member according to the direction of movement of said yoke.

2. The combination of a worm gear, a support for the worm gear, a power transmitting member driven from said worm gear and comprising a pair of spaced pinions and a worm wheel intermediate said pinions and in engagement with said worm gear, a gear receiving motion from said power transmitting member, and a holder for said worm gear consisting of a yoke, a shaft, a block eccentrically mounted on the

shaft, a strap encircling the said block, and
a pivotal connection between said strap and
yoke whereby in the movement of the shaft
the yoke may move the worm gear into and
5 out of engagement with said worm wheel
according to the direction of movement of
the yoke.

10 3. The combination of a worm gear, a
worm wheel adapted to receive motion from
said gear, and a holder for said worm gear
consisting of a yoke, a shaft, a block eccen-
trically mounted on the shaft, a strap en-
circling the said block, a pivotal connection

between said strap and yoke whereby in
the movement of the shaft the yoke may 15
move the worm gear into and out of en-
gagement with said worm wheel according
to the direction of movement of the yoke,
and a support for said holder.

In testimony whereof I affix my signa- 20
ture in presence of two witnesses.

NIELS JANTZEN.

Witnesses:

H. N. MERRICK,
ALBERT S. BASSLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."