

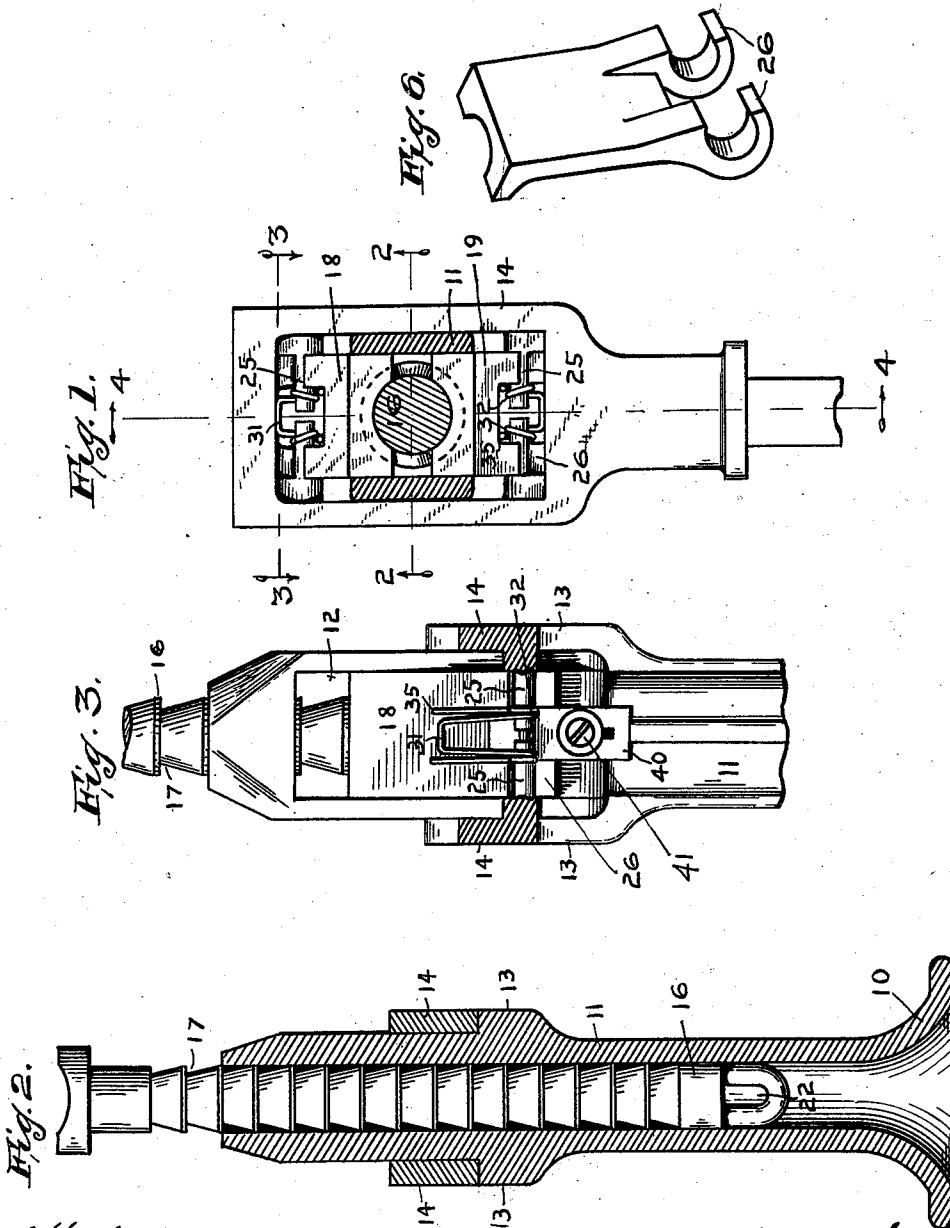
A. NEAL.
LIFTING JACK.

APPLICATION FILED NOV. 14, 1910.

1,001,066.

Patented Aug. 22, 1911.

2 SHEETS—SHEET 1.



Witnesses;
L. B. Moorme.
Wm. Hurte.

Inventor;
Albert Neal,
Minturn & Woerner
Attorneys,
By J. A. Minturn

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UNITED STATES PATENT OFFICE.

ALBERT NEAL, OF CENTER, INDIANA.

LIFTING-JACK.

1,001,066.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed November 14, 1910. Serial No. 592,245.

To all whom it may concern:

Be it known that I, ALBERT NEAL, a citizen of the United States, residing at Center, in the county of Howard and State of Indiana, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to lifting-jacks and more particularly to lever-operated jacks suitable for lifting automobiles, wagons, and heavy objects in general; for stretching wire, pulling stumps, and the like, and the object of the invention is to provide means whereby a single lever may be used at the will of the operator to advance or retract a lifting bar or staff.

I accomplish the objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section on the line 1—1 of Fig. 5. Fig. 2 is a transverse vertical section on the line 2—2 of Fig. 1. Fig. 3 is a vertical section on the line 3—3 of Fig. 1. Fig. 4 is a vertical section on the line 4—4 of Fig. 1. Fig. 5 is a side elevation of the middle portion of the jack, and Fig. 6 is a perspective view of one of the pawls.

Like characters of reference indicate like parts throughout the several views.

Referring to the drawings, 10 is the base and 11 the hollow standard or support extending up from said base and preferably integral therewith. Formed near the upper end of the hollow standard 11, through diametrically opposite sides thereof, are openings 12, and below these openings on opposite sides from the sides with the openings 12, are the lugs 13. The latter terminate in vertical ribs and are rounded to facilitate the oscillatory movement thereon of a rocking head 14. The base of the standard 11 will preferably be round in cross section to receive a staff or lifting bar 16, round in cross section. This lifting bar 16 is provided with annular notches 17, forming it into a rack-bar, which will be engaged upon diametrically opposite sides by a pair of oppositely disposed dogs or pawls 18 and 19. The latter are pivotally mounted in the rocking head 14. The lower end of the lifting bar 16 is provided with an eye 22 for the attachment of a cable or hook when the jack is used for stretching wire, or cables, or for lifting loads below its base 10.

The head 14 is substantially a rectangular

frame in the opening of which the squared upper end of the standard 11 makes a close fit against the inner side-walls of said frame. The side walls of the frame have the under notches 27 to receive the rounded lugs 13, upon which the head is adapted to be rocked, and they also have the inwardly extended trunnions 25 in two pairs, one pair on each side of the standard 11.

The dogs 18 and 19 are substantially alike in size and shape. They are each provided with a pair of hooks 26 to engage the trunnions 25. The upper ends of the pawls are extended through the openings 12 of the hollow standard and these ends are shaped as shown, to engage the teeth of the lifting bar 16. Wrapped around the trunnions 25 are coiled springs 32, the outer arms 31 of which bears against the ends of the head 14, and the inner arms 35 of which bear against the adjacent one of said dogs 18 or 19, and force the upper ends of said dogs into constant contact with the notches 17 of the lifting bar 16.

The device as thus far described is sufficient for extending or raising the bar 16, but not for retracting or lowering the bar, and I will now describe the mechanism by which the latter is accomplished.

Mounted in vertical channels to serve as guides in the standard 11, are the bars 40, which have longitudinal slots for the passage therethrough of securing screws 41, whereby the bars are capable of longitudinal adjustment limited by the lengths of their said slots. The upper ends of bars 40 terminate with outwardly turned lugs or ribs 42, extending transversely of the bars, which contact with projections 43 on the inner sides of the dogs 18 and 19, upon a sufficient downward movement as produced by the oscillatory movement of the hand lever in excess of that required for extending or raising the bar 16; and the contact of projection 43 with a rib 42 forces the upper end of that pawl outwardly, out of engagement with bar 16. This disengagement must continue until the upper end of the pawl has been raised above the adjacent shoulder on the bar 16, which is accomplished by the upward travel with the pawl of the bar 40. This upward travel of bar 40 is permitted by its said longitudinal slot and the required travel is imparted by the formation of a sufficient notch in the pawl below projection 43 of the pawl, which receives the

rib 42 of bar 40 and by the engagement thus made the bar 40 is carried up with the pawl until the bar is arrested by contact of its screw 41 with the lower end of its slot. This causes the lug of bar 40 to be withdrawn from its notch, but at a point above the shoulder on bar 16 which just previously engaged the pawl. The load on the jack is then resting on the opposite pawl and will be lowered by continued travel of the hand lever until supported on the first pawl by contact of the latter with the next upper shoulder on bar 16. This operation is a continuous one merely by giving the hand lever a sufficiently longer throw or travel than for raising the load.

The hooked ends of the pawls are kept from disengagement with their trunnions when lowered, by the oblique extensions 45, from standard 11.

Having thus fully described my invention, what I claim as new and wish to secure by Letters Patent of the United States, is—

1. In a lifting-jack, a standard, a notched lifting bar, a frame supported by the standard, a handle for rocking the frame; a pair of pawls carried by the frame and adapted to alternately engage notches on opposite sides of the lifting bar to extend the bar when the frame is rocked, and means by a still greater rocking travel of the frame to alternately hold the pawls out of engagement with the next shoulder above to permit retraction of the lifting bar, said means being slidably mounted to move longitudinally on the standard within predetermined limits with the pawl.

2. In a lifting-jack, a standard, a notched lifting bar, a frame supported by the standard, a handle for rocking the frame; a pair of pawls carried by the frame and adapted to engage notches on opposite sides of the

lifting bar to extend the bar when the frame is rocked, said pawls having under-side extensions, and projections from the standard 45 to engage said projections of the pawls by a still greater rocking travel of the frame and alternately hold the pawls out of engagement with the next shoulder above to permit retraction of the lifting bar, said projection 50 being slidable on the standard to continue said disengagement until the pawl has passed the shoulder.

3. In a lifting-jack, a hollow standard having oblique extensions, a notched lifting bar mounted in said hollow standard, a frame rockingly supported by the standard and having inside pawl-supporting trunnions, a handle for rocking the frame, a pair of pawls having hooked lower ends to engage the trunnions of the frame, said engagement being maintained by contact of the hooks with the oblique extensions of the standard, and upper ends adapted to engage notches on opposite sides of the lifting bar 65 to extend the bar when the frame is rocked. said pawls having under-side extensions and adjacent notches, bars longitudinally slidable on the standards, said bars having extensions to engage said notches of the pawls 70 when the pawls are brought into contact therewith by a sufficient rocking travel of the frame to hold the pawls out of engagement with the next shoulder above and permit retraction of the bar. 75

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this 12th day of August, A. D. one thousand nine hundred and ten.

ALBERT NEAL. [L. s.]

Witnesses:

F. W. WOERNER,
L. B. WOERNER.