March 27, 1951 R. H. FLOYD 2,546,361

LIFTING JACK

Filed Aug. 20, 1945

Fig. 2.

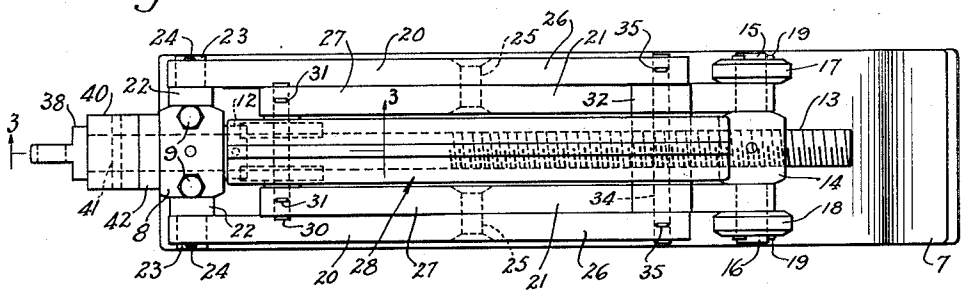



Fig. 1.

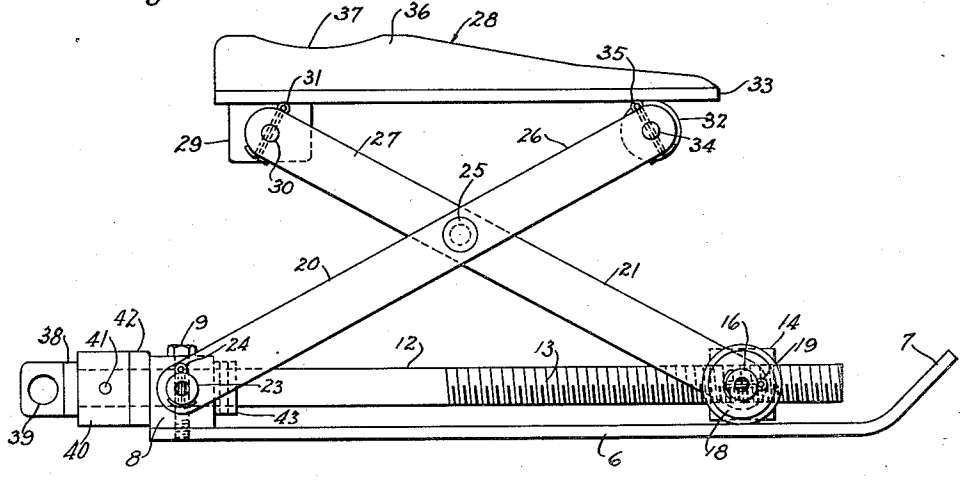
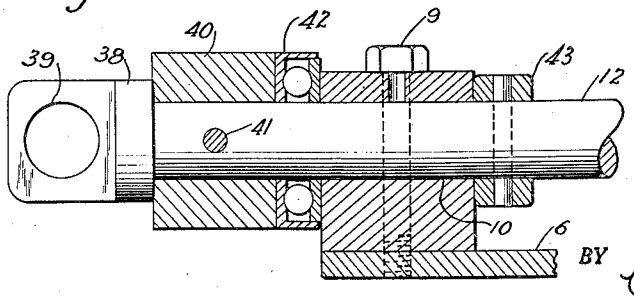



Fig. 3.




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2,546,361

## LIFTING JACK

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1 Claim. (Cl. 254—126)

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My invention relates to a lifting jack, and more particularly to a jack adapted primarily for lifting automotive vehicles. An important object of the invention is to provide in such a device, mechanism of exceptional strength and simplicity having a leverage arranged to exert the maximum amount of energy upon the lifting operation.

Another object is to provide easily operable means to draw together opposed ends of crossed levers, to effect the lifting operation.

My invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

Fig. 1 is a side elevational view of a lifting jack embodying the foregoing objects.

Fig. 2 is a plan view of same.

Fig. 3 is an enlarged section taken on the line 3—3 of Fig. 2.

Referring more in detail to the drawings, the reference number 6 generally designates a base plate upon which my jack is mounted and upon which it operates. An end 7 of the plate 6 is turned up, to provide a stop, as hereinafter more fully described.

A block 8 is fastened upon the plate 6 by bolts 9. Rotatably supported in a bore 10 in the block 8 is a shaft 12, the outer end 13 of which is threaded. A nut 14 is carried on the threaded portion 13 of the shaft.

Stub axles 15 and 16 are mounted in the nut 14 to project laterally therefrom and to support wheels 17 and 18 that roll on the base plate 6. Cotter pins 19, or other suitable means, may be employed to hold the wheels 17 on their respective axles.

Lazy tong, crossed levers 20 and 21 at opposite sides of the jack are respectively pivoted at their lower ends to the block 8 and to the nut 14. Enlargements 22 on the block 8 support stub axles 23 upon which the lower ends of the levers 20 are pivoted. Here again cotter pins 24, or other suitable means, may be employed to maintain the

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levers on the axles. The axles 15, 16 and 23, have been shown tubular, which is a satisfactory construction. The lower ends of the levers 21 are pivoted on the axles 15 and 16, between the wheels 17 and 18 and the nut 14.

Pins 25 pivotally connect the crossed levers 20 and 21 in an arrangement in which the lower legs of the crossed levers (connected with the axles 15, 16 and 23) are longer than the upper ends 26 and 27 of the levers 20 and 21, respectively. This arrangement facilitates the lifting operation by increasing the leverage correspondingly.

A shoe plate 28 is supported on the upper ends of the lever arms 26 and 27. A heel 29 on the plate 28 is pivotally connected to the lever arm 27 by an axle 30 that extends through the heel 29 transversely to connect with both of the upper arms 27. Cotter pins 31, or other suitable means, prevent the escape of the arms 27 from the axle 30.

A roller 32, preferably at least as long as the width of the toe 33 of the shoe 28, supports the toe portion of the shoe 28. The roller 32 in turn is supported by an axle 34 which is supported on the upper ends of the lever arms 26. Cotter pins 35, or other suitable means, prevent the escape of the arms 26 from the axle 34.

The shoe plate 28 comprises a rib 36 that contains a seat 37 for engaging a portion of the vehicle or other article or device to be lifted, to prevent slippage therefrom.

The outer end of the shaft 12 carries a head 38 provided with an eye 39 for engagement with an actuating tool. Abutting the head 38, on the shaft, is a collar 40. A pin 41 fastens the collar to the shaft. A thrust bearing 42 is disposed between the collar 40 and the block 8. A collar 43 is shrunk, or otherwise suitably fastened, upon the shaft 12. The collars 40 and 43 limit longitudinal movement of the shaft 12.

The operation of my present lifting jack is as follows: While the jack is in a lowered position, it is slid under the vehicle or other article or device to be lifted. The upturned end 7 of the base provides a stop to limit outward movement of the nut 14. When the jack is in position, the shaft 12 is turned through the intermediary of a tool (not shown) engaging the eye 39. Turning the shaft 12 causes the nut 14 to be drawn toward the block 8, thereby effecting a lifting action upon the shoe plate 28 and its supported weight. Releasing the jack from its weight supporting position is effected by reversing the rotation of the shaft 12 until the plate 28 is lowered out of

engaging position with the vehicle or other article or device. Then the jack can be pulled out from under the vehicle, article or device.

It is believed apparent that the top of the plate 6 provides a smooth surface upon which the wheels 17 and 18 can roll free from obstruction, while the relative shortness of the upper ends 26 and 27 of the levers increases the leverage and lifting power of the jack.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications that may fall within the scope of the appended claim.

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

A lifting jack comprising a flat base plate having an upturned end, a fixed journal block on the upper face of the other end of said base plate and having laterally directed fixed axles, a support plate parallel to the base plate and spaced thereabove, a longitudinal upstanding rib on the support plate and having a vehicle-engaging and locating seat formed in the end thereof that is on the journal block-carrying end of the base plate, a pivot-connecting block fixed to and depending from the under face of the support plate on the end thereof beneath the seat in the rib, two similar pairs of levers pivotally connected at a point whereby one end of each pair is shorter than the other end, the shorter ends being equal in length and the longer ends also being equal in length, the longer ends of one pair of levers being connected to the axles of the mentioned journal block, a roller connecting the shorter ends of said latter pair of levers and having rolling and supporting engagement with said



under face of the support plate from the mentioned pivot-connecting block toward the opposite end of said support plate, an internally threaded block having laterally extending fixed axles connecting the longer ends of the other pair of levers, rollers on said latter axles having rolling engagement with the upper face of the base plate between the upturned end thereof and the journal block thereon, laterally extending pivot pins in the mentioned pivot-connecting block for connecting the shorter ends of said other pair of levers, said pins being spaced from the under face of the support plate a distance equal to the radius of the roller engaged with said under face whereby the support plate is maintained parallel to the base plate during all pivotal positions of the pairs of levers, and a shank rotatable in the journal block and having a threaded end engaged with the internally threaded block to move the latter in a path parallel to the base plate to thereby angularly adjust the pairs of levers relative to each other and thereby adjust the space between the base plate and support plate.

RAY H. FLOYD.


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