C. W. PARKER.

JACK FOR AUTOMOBILES.

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1,206,361.

Patented Nov. 28, 1916.

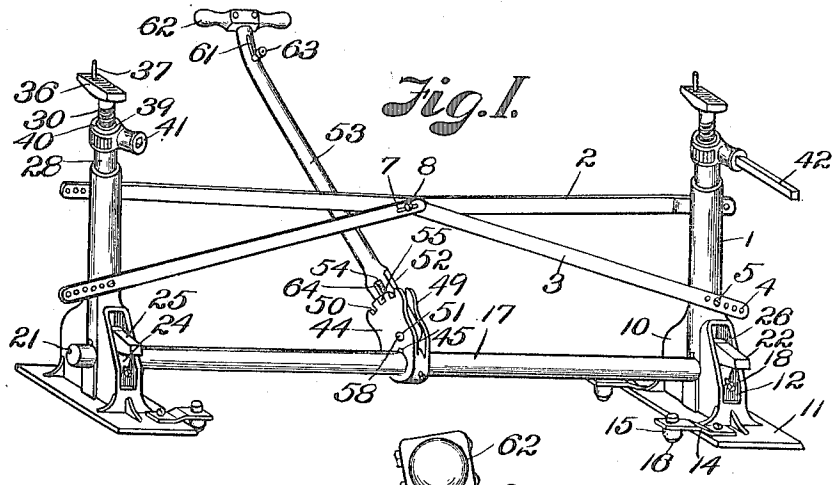

Fig. I.

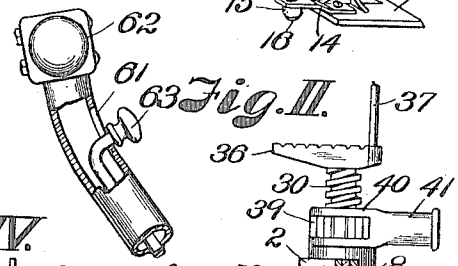

Fig. II.

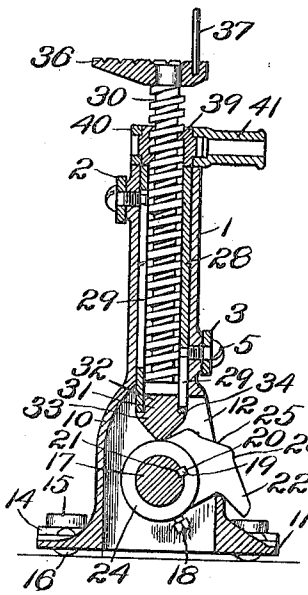

Fig. III.

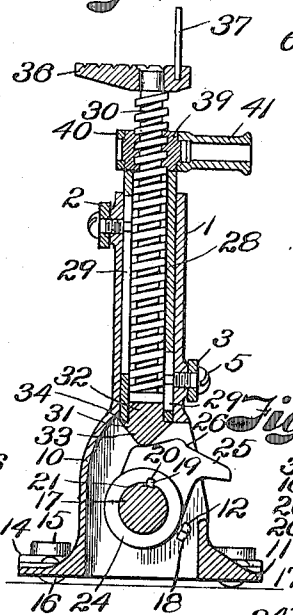

Fig. IV.

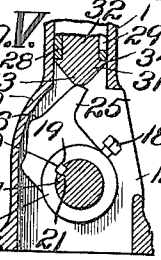

Fig. V.

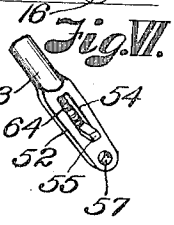

Fig. VI.

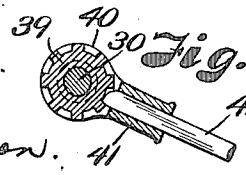

Fig. VII.

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JACK FOR AUTOMOBILES.

1,206,361. Specification of Letters Patent. Patented Nov. 28, 1916.

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To all whom it may concern:

Be it known that I, CHARLES WILSON PARKER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Jacks for Automobiles; 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.

My invention relates to jacks, and more particularly to a device of that character for use in simultaneously lifting both the fore or rear wheels of an automobile, in order to facilitate cleaning or repairing of the under frame or running gear of the car, or to relieve the wheels of the weight of the car while the latter is standing idle. In accomplishing this object, I have provided improved details of structure the preferred forms of which are illustrated in the accompanying drawings, wherein:

Figure I is a perspective view of a jack constructed in accordance with my invention. Fig. II is an enlarged vertical section of the device; part of the lever arm being broken away to show the latch rod. Fig. III is an enlarged vertical section of one of the jack standards, showing the screw lever as well as the cam lift; the latter being in its lowermost position. Fig. IV is a similar view showing the cam lift in its first elevated position. Fig. V is a view of the cam lift in its highest position. Fig. VI is a detail view of the lever latch. Fig. VII is a cross section of the screw lift, showing the reversible combination with its lever.

Referring more in detail to the parts: 1 designates the jack standards, which are adjustably spaced by bars 2 and 3, each of which has a plurality of apertures 4 in its outer end through which a screw 5 may be projected into the standard 1, which it overlies, in order to fix the bar in place.

The ends of the bars 3, opposite the apertures 4, are provided with slots 7 through which a screw 8 is projected into the long cross bar 2 in order to lock the parts together and provide additional adjustment for the short bars.

Each of the standards 1 comprises a tubular post having a hollow base 10, provided with a ground seat 11 and having a port 12 opening into the interior of the base and through which the contained parts may be observed, removed or installed, and repaired.

Each of the ground seats 11 is provided with laterally directed arms 14 having depending sockets 15 containing ball-casters 16 upon which the standards and the parts carried thereby are supported under ordinary conditions and upon which the jack may be easily moved about.

The arms 14 are of spring material of sufficient stiffness to support the weight of the jack, but which will give under additional weight to project the ground seats 11 flat against a floor to form a firm foundation for the jack.

Revolubly mounted in the hollow bases 10 of the spaced standards 1, is a cam shaft 17, and fixed to the portions of said shaft within the hollow standard bases, by set screws 18 and also preferably by the keys 19 that seat in slots 20—21, are cams 22, each of which preferably comprises a hub portion 24 that is carried on the shaft, and a head portion having seats 25 at different radial distances from the shaft center and provided with stops 26 at the inner ends of the seat portions, in order to hold the jack post, which is adapted to ride thereover.

Each cam has mating seats 25 and the faces on the cams may be of any desired number according to the nicety of adjustment which it is desired that the jack may afford.

Slidably mounted in each of the jack standards is a sleeve 28 having longitudinal slots 29 through which the screws 5, by which the standard spacing bars are secured to the standards, are projected to limit the vertical movement of the sleeves to the vertical adjustability of the jack as afforded by the lifting cams, and slidably mounted within the sleeve is a screw 30.

Fixed to the lower end of each of the sleeves 28 is a head 31, having a shank part 32 located within the sleeve and forming a stop for the contained screw, and a head portion 33 having a ridged lower end forming a point for bearing on the adjacent lifting cam and flanges 34 that project under the edge of the sleeve in order to lift the sleeve with the screw when the jack is manipulated.

Each of the screws has a seat 36 on its upper end adapted for projection underneath the axle of an automobile, and having a stop 37 at one end for abutment against the axle when the jack has been projected sufficiently therebeneath, and mounted on the jack screw is a ratchet collar 39 that is inclosed by a ring 40 having a hollow shank 41 through which a jack lever 42 may be projected; the end of the lever being beveled toward one edge to form a head that will lock against the teeth of the ratchet collar, when the ring is moved in one direction, and slide over the teeth when moved in the other direction, in order to raise or lower the jack screw; it being apparent that the lever bar may be reversed when the direction of travel of the screw is to be reversed.

In order to manipulate the cam shaft and lift cams, I provide the shaft with a bracket 44, which is locked to the shaft by a key 45 that seats in grooves 46—47 in the shaft and bracket respectively. The bracket itself comprises spaced arms 49 having curved free ends provided with paired sockets 50, and having paired apertures 51 adjacent the shaft.

Projected between the bracket arms is the head 52 of a lever 53; the said head being provided with a longitudinal slot 54 to accommodate a latch bar 55 that projects through the slot and is adapted to seat in any of the sockets 50, in order to lock the lever to the bracket, and the end of the head is provided with an aperture 57 through which a pin 58 that is projected through the apertures 51 in the shaft bracket, is also projected in order to pivotally mount the lever on the bracket.

The lever arm 53 is tubular, and extending through said arm is a rod 60, the inner end of which projects into the slot 54 and carries the latch member 55, while the outer end is bent laterally and projected through a slot 61 in the lever arm adjacent the end handle 62; the projecting end of the rod being provided with a knob 63, whereby it may be manipulated to move the rod outwardly against the tension of a spring 64 that is mounted on the rod between the base of the head socket 54 and the latch 55 and normally yieldingly retains the latch in one of the sockets 50 in the shaft bracket. The paired sockets 50 in said bracket correspond to the seats 25 on the lift cams, and the device is adapted for such use that when the lever is lowered to the limit, with the latch in the lower socket, the jack screws will be raised to set the heads 32 on the first cam seats, and when the lever is lowered with the latch in the second pair of bracket sockets, the screw head will be lifted to the second cam seat, etc.

When the device is not in use it may be stored in a small space in a garage or elsewhere, and when only carrying its own weight, the springs 14 hold the ground seats off of the floor and carry the entire device on the ball-casters, so that it may be easily and quickly moved to a desired position.

When the device is to be used to raise an automobile, it is moved toward the front or rear axle until the seats 36 project therebeneath; the stops 37 serving to retard the travel of the jack when the seats are properly placed. With the jack located as described, the operator places the latch 55 in the lower pair of bracket sockets and moves the bracket downwardly to revolve the shaft and the cams that are carried thereon.

As the cams are revolved the inclined planes thereof move under the beveled heads on the jack screws, and move the screws upwardly along said planes, and when the bracket has been lowered to its limit, the heads of the jack screws have passed over the bossed stops on the cams and seat at the first position; it being apparent that as the points of the jack screw heads are directly over the center of the shaft, there will be no such tendency of the weight of the car to return the cams to initial position as there would be if the weight were under the center of the cam or shaft.

If the first elevation is not sufficient, the operator withdraws the latch by pulling outwardly on the latch rod 60, turns the lever within the bracket and seats the latch in the next pair of sockets. He then repeats the downward movement of the lever to give the lever shaft and cams another turn, and the jack head is carried upwardly to the next seat and consequently lift the automobile a still farther distance.

When the jack is to be lowered, it is only necessary to give the shaft a slight upward pull in order to unseat the screw heads over the bosses at the bases of the cam seats and let the screws down until the wheels of the car again rest on the floor.

It is apparent that by providing the screw with the jack ratchet, the device may be used without the cams, and that the reversible ratchet may be used to adjust the screws for the cam mechanism.

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

1. A lifting jack comprising a pair of standards, a pair of lifting bars each movable in one of the standards, a shaft connecting the standards, a pair of cams arranged on the shaft and each having a plurality of bearing faces thereon to coöperate with one of the lifting bars, and an operating lever for the shaft arranged between the standards and adjustably connected to said shaft so that its operating movement will correspond to any one of the bearing faces on the cams.

2. A lifting jack comprising a pair of standards, a pair of lifting bars each movable in one of the standards, a pair of cams arranged on the shaft and each having a plurality of bearing faces thereon to coöperate with one of the lifting bars, a bracket secured to said shaft between the standards, a lever pivoted to said bracket, and means for holding said lever in different positions on said bracket so that the operating movement of the lever can be made to correspond to any one of the bearing faces on the cams.

3. A lifting jack comprising a pair of standards adjustable toward and from each other, lifting bars movable in the standards, cams mounted in the standards for coöperation with the lifting bars, a shaft adjustable in said cams to accommodate the relative adjustment of the standards, and a lever connected to said shaft between the standards.

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

CHARLES WILSON PARKER.

Witnesses:
LYNN A. ROBINSON,
L. E. COATS.

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